Advant® OCS
with Master software

# Document Builder

## Version 3.2

## User’s Guide

3BSE 013 929R201

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| **CAUTION** | Hazards which could result in equipment or property damage |
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# Chapter 1 Introduction

## 1.1 Before You Begin

This manual describes the Document Builder. The manual is meant for users to get familiar with the functions, commands and utilities of the Document Builder. To get the most recent hints, recommendations and settings please read the actual Release Notes which are delivered along with the product.

The reader of this manual should have proper education about engineering in general and the work flow usually used in Advant Engineering projects.

## 1.2 Equipment Requirements

To get the actual requirements and recommendations please read the actual Product Guide and Release Notes.

## 1.3 How to Use This Book

The following figure illustrates the organization of this user manual. For a quick lookup of terms, try the index first.

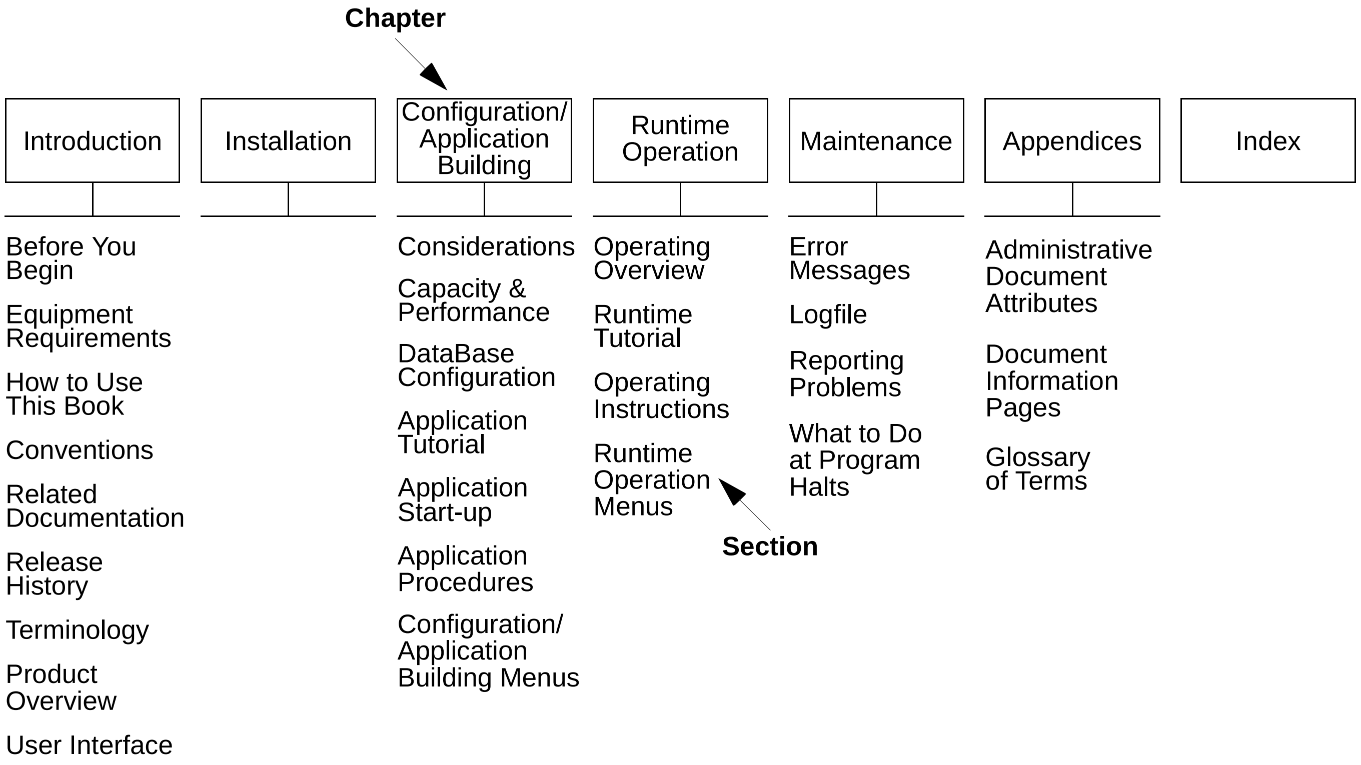


*Figure 1-1. Organization of Manual*

## 1.4 Conventions

The following conventions are used throughout this manual for the presentation of material:

- Names of screen elements (for example, the title in the title bar of a window, the label of a field of a dialogue box) are initially capitalized.
- Names of keyboard keys are boldface.
  - Initial capital letters are used for the name of a keyboard key if it is labelled on the keyboard. For example, the **Return** key or **<Return>**.
  - Lowercase letters are used for the name of a keyboard key that is not labelled on the keyboard. For example, the **space bar**, **comma key**, and so on.
  - In descriptions, the word "key" is used in conjunction with its name. For example, pressing the **Return** key initiates the process.
  - In tables and procedures, angle brackets replace the word "key." For example, press **<Return>**.
  - A dash is used to indicate that you must simultaneously press several keys. For example, **<Ctrl-C>** indicates that you must hold down the **Control** key while pressing the **C** key.
  - The phrase "press and release" is used to indicate that you sequentially press several keys.
- Names of push and toggle buttons are boldface.
  - Initial capital letters are used for the name of a push or toggle button labelled on the display. For example, the **OK** button.
  - In descriptions, tables and procedures, the word "button" is used in conjunction with its name. For example, pressing the **OK** button initiates the process.
- Names of menus and menu items are boldface.
  - Initial capital letters are used for the name of menus listed in the menu bar. For example, the **File** menu.
  - Initial capital letters are used for the name of menu items. For example, to open a new window, choose **New** from the **File** menu.
- System prompts/messages are shown in the `Courier font`, and user responses/input are in the **`boldface Courier font`**. For example, if you enter a value out of range, the following message is displayed:

  ```
  Entered value is not valid. The value must be 0-30.
  ```

  In a tutorial, you may be told to enter the string TIC132 in a field. The string is shown as follows in the procedure:

  ```
  TIC132
  ```

## 1.5 Related Documentation

*Table 1-1. Related Documents*

| Title | Description |
|---|---|
| Structure Builder User's Guide | This book describes the creation of projects, Advant objects, structures and aspects and how to navigate in projects |
| Engineering Methods Reference Manual | This book describes the workflow and the principles of object oriented engineering by using AdvaBuild engineering software |

## 1.6 Release History

This is the third product release of the Document Builder founded on the Advant object concept.

*Table 1-2. Release History*

| User Manual Version | Description |
|---|---|
| 3BSE013929R0001 | Represents the Document Builder 3.0 |
| 3BSE013929R0101 | Represents the Document Builder 3.1/0 |
| 3BSE013929R201 | Represents the Document Builder 3.2/0 |

## 1.7 Terminology

See Appendix B, Glossary of Terms.

## 1.8 Product Overview

### 1.8.1 Product Version

This manual is related to Document Builder Release 3.2/0.

### 1.8.2 Product Structure

The Document Builder is composed of several software packages:

- **Document Builder** including an interface to the Aspect Request Broker (ARB) to enable communication with other Builders like Structure Builder
- **MS Access**, serving as the Document Builder's database and offering a user interface to view and manipulate documents
- In addition to this, a choice of **document templates** are provided to support you in the creation of official documents.

**NOTE**

Other applications like MS Word, MS Excel or FrameMaker used to handle the contents of the documents are optional applications and are not delivered with the Document Builder.

## 1.8.3 Main Features

The Document Builder is a PC/Windows based system using a variety of PC/Windows tools to support the user in the efficient creation and handling of documents. Tools suggested and pre-configured in regard of available templates in this release are:

- MS Word 97
- MS Excel 97

These applications are not part of the delivery but are assumed to be installed at the customer's site. Other PC/Windows applications available at the customer's site can easily be integrated into the Document Builder by the user. The level of integration (e.g. supporting a Print command from the Structure Builder / Document Builder) depends on the tool considered.

Suggestions for additional applications to handle documents are **MS Binder, MS Powerpoint**, **MS Project** or **Lotus ScreenCam**.

**MS Word** can be used to create free-styled documents. MS Word provides a full set of tools for documentation, including a full-featured word processor, an advanced graphic tool-box and many unique document handling utilities.

Functions provided are for example:

- WYSIWYG (What-You-See-Is-What-You-Get) interface
- Fully-featured word processor
- Graphics creation, editing and import capabilities
- Mathematical equation composition
- Features for management of large documents
- Table handling
- Comparison of different document versions
- Connection by variables to data stored in the data base of the DOB (e.g. footer data). Changes made to the data are then automatically updated in the document.

A number of sample templates are included, e.g. for memo, letter, fax, overhead, user manual. User defined templates can easily be added to Document Builder (see Section 3.6.2.7, Register a New Template).

By means of import filters, document and graphics files in other formats can be converted in order to be used in MS Word.

**FrameMaker** has been recommended for the previous version of Document Builder and there were also a number of FrameMaker templates included. These templates are not supported anymore but it is no problem to work with FrameMaker documents or also define FrameMaker templates in Document Builder, provided the client has installed the respective programs.

**MS Excel** is a powerful spread sheet application. Apart from strong calculation functions, it offers word processing features and a graphic toolbox. The handling of business graphics is very user friendly.

Functions provided are for example:

- Calculation functions reaching from mathematical functions to complex financial calculation functions. This allows the user to create spread sheet applications like budget planning, resource calculations, price calculations or even advanced applications like dimensioning of motors or valves.
- Calculations can be enriched with texts and graphics.
- The OLE technique allows to embed external text or graphic files into the spread sheet or vice versa.
- Figures calculated can be presented in various types of business graphics like pay charts, bar charts, etc.
- MS Excel also supports an interface to data bases like MS Access, which allows the user to include data base data into the calculations.

A number of sample templates are included. User defined templates can easily be added to the Document Builder (see Section 3.6.2.7, Register a New Template).

**General Features**

- Each document can be assigned administrative attributes which are stored in the Document Builder’s MS Access database. The document administration allows you to navigate, retrieve and maintain your documents.
- For some applications like MS Word and MS Excel, a library of templates is provided. Moreover, the user can define his own templates and store them in the library.

## 1.9 User Interface

The user interface of the Document Builder is implemented based on MS Windows. You choose the commands by accelerator keys and short-cuts on the keyboard or by mouse actions. The dialogs and forms which will appear on screen normally have Help buttons; clicking this button will open either the Document Builder’s or the MS Office on-line help.

General information about how to use the MS Windows user interface is described for example in *Microsoft Windows NT 4.0* Help system.

# Chapter 2 Installation

## 2.1 General

See Document Builder Release Notes.

# Chapter 3 Configuration/Application Building

## 3.1 Considerations

### 3.1.1 Project and Directory Structures

**Advant Engineering Server Part**

On the server, Document Builder stores data and programs in the following directories (note that *abtool1* and *advabld1* are sharenames and *release* is to be replaced by the current release directory, e.g. **32r0**):

- *abtool1*\**dob**\*release*...:
  storage of Document Builder programs and meta data as described below plus the Document Builder Release Notes for this release (file **relnotes.pdf**):
  - *abtool1*\**dob**\*release*\**bin**
    installed Document Builder programs
  - *abtool1*\**dob**\*release*\**free**
    installed programs for **FreeAspect**s
  - *abtool1*\**dob**\*release*\**help**
    Document Builder help files
  - *abtool1*\**dob**\*release*\**ini**
    Document Builder initialization files
  - *abtool1*\**dob**\*release*\**netsetup**
    Document Builder local setup procedure
  - *abtool1*\**dob**\*release*\**reg**
    Document Builder template database and library database
  - *abtool1*\**dob**\*release*\**templ**
    Document Builder templates.
- *advabld1*\**data**\*project*\**dob**\\...:
  storage of project specific data:
  - *advabld1*\**data**\*project*\**dob\\reg**
    project specific Document Builder database
  - *advabld1*\**data**\*project*\**dob\\templ**
    project specific templates (see also Section 3.6.2, Configuration of Templates)
  - *advabld1*\**data**\*project*\**dob\\work**
    project specific document files.

**Advant Engineering Client Part**

On the client, Document Builder stores data and programs in the following directories (note that *ADVABLDENV* means an environment variable **ADVABLDENV** which points to a local directory, e.g. **c:\advabldenv**, *TMP* means an environment variable **TMP** pointing to a local temporary directory, e.g. **c:\tmp** and *SYSTEMDIR* means the local system directory, e.g. **d:\winnt\system32***)*:

- *ADVABLDENV*
  Document Builder configuration files (**dob.ini, dob.txt**)
- *TMP*
  Document Builder tracefiles (**dobasi.log, dobmdb.log, dobmda.log, dobexe.log, dobdoc.log, dobxls.log, dobupg1.log, dobupg2.log)**
- *SYSTEMDIR*
  Document Builder function library (**dobasi32.dll**)
- *MS Office Template Directory*, e.g. **d:\Program Files\Microsoft Office\Templates**
  Word and Excel Document Builder templates (**dob97.dot, dob97.xlt, dob97.xls**).

## 3.2 Capacity & Performance

The capacity of the system in terms of number of documents that can be stored is limited by the diskspace available.

## 3.3 Database Configuration

The Document Builder database is divided into parts:

- A project database named **reg32.mdb** for each existing project in directory *advabld1***data***project***dob\reg,** containing information about this project’s documents,
- A central library database **dob32.mda** in directory *abtool1***dob\32r0\reg,** containing code modules for execution of Document Builder actions and
- A system database called **system32.mdw** in directory *abtool1***dob\32r0\reg** which is required to coordinate multi user access.
- An upgrade database called **dob32upgrade.mdw** in directory *abtool1***dob\32r0\reg** which is required to upgrade projects created with the previous release of Document Builder.

The project database **reg32.mdb** has no record locking as due to MS Access’ record locking mechanisms (i.e. locking row blocks instead of a single row only) problems might occur in a multi user environment.

The project database **reg32.mdb** has its DDE capabilities enabled as DDE commands are sent to the database when the Document Information form is to be opened.

## 3.4 Application Tutorial

## 3.5 Application Start-up

The Document Builder is an optional part of the AdvaBuild Engineering Software. It is accessed via the Structure Builder by opening an aspect representing a document. There are two basic views supported when opening a document aspect:

- Open document (via **Open | Document**)
  starts the related application (for example for example MS Word or MS Excel) and opens the document represented by the aspect.
- Open summary (via **Open | Summary**)
  opens the Document Information form presenting various administrative attributes of the document like document identity, titles, etc.

Opening a document is performed in the Structure Builder's *Object* window (see Figure 3-1). How to start up the Structure Builder and how to open its *Object* window is described in the **Structure Builder**'s User's Guide.

The next sections describe:

- How to handle documents within the Structure Builder
- How to open the Document Information Form (start-up the Document Builder).

### 3.5.1 How to Create a New Project

To create a new project in **Structure Builder** as well as **Document Builder** please follow these steps:

1. In **Structure Builder**, start the **Administration** utility by choosing **Administration** from the **Project** menu.
2. In the Administration dialog, choose **Projects/New.**
3. Enter required data and press OK to create a new project (for further information see **Structure Builder** User's Guide).

**NOTE**

Document Builder has to be installed first before being able to create a new project including Document Builder.

If a project was created without the **Document Builder** having been installed before, the **Document Builder** part of the project can be added after the installation by selecting the **Register** option in the **Administration** utility of the **Structure Builder** (for details see **Structure Builder User' Guide**).

During the creation of a new **Document Builder** project,

- new directories **dob\reg**, **dob\templ** and **dob\work** are created underneath the project root directory *advabld1***data***project*
- the template database **reg32.mdb** in directory *abtool1***dob\31r0\reg** is copied to the project directory **dob\reg** and registered with ODBC and
- the **Document Builder** aspect types **Document** and **FreeAspect** are registered with the **Structure Builder**.

## 3.5.2 How to Upgrade an Old Project

When you want to work with a project created with the previous release of Document Builder, this project has to be upgraded first.

Document Builder automatically recognizes an old project and suggests an upgrade before performing the following actions:

- Restore a project
- Add new aspect
- Delete aspect
- Open or print aspect
- Copy object containing document aspects
- Update aspect description.

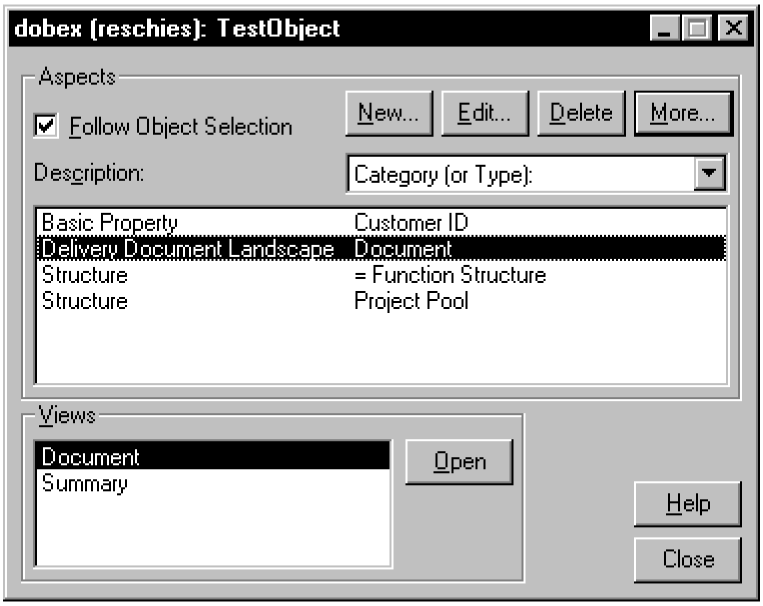
If the user chooses to upgrade the project, this is done automatically by **Document Builder**. On refusal, the requested action cannot be performed.

## 3.5.3 How to Handle Documents Within the Structure Builder

In the *Object* window of the Structure Builder (see Figure 3-1), the user can perform several actions upon aspects. The following considerations focus on aspects representing documents. The functions that can be performed on documents within the Structure Builder are:

- **Add** a new document
- **Delete** a document
- **Open** a document (the document itself or its administrative attributes)
- **Print** a document (the document itself or its administrative attributes)
- **Copy** a document (as part of an object only).

How to execute these functions is described below.



| | |
|---|---|
| Basic Property | Customer ID |
| Delivery Document Landscape | Document |
| Structure | = Function Structure |
| Structure | Project Pool |

Document
Summary

*Figure 3-1. Structure Builder* ***Object*** *Window*

### 3.5.3.1 Add a Document

A new document is created on the base of an existing template or file. The new document is visible in the **Object** window after creation and consists of administrative meta data in the **Document Builder**'s database and a correspondent file or file reference.

Creation of document and other aspects is restricted to users with Write access. Read Only users are not allowed to create aspects (for information on how to give access rights to a user please refer to the Structure Builder's user manual).

Note that, starting from this release, a new document always offers the possibility to insert dynamic data, provided

a. it is a **Word** or **Excel** document and

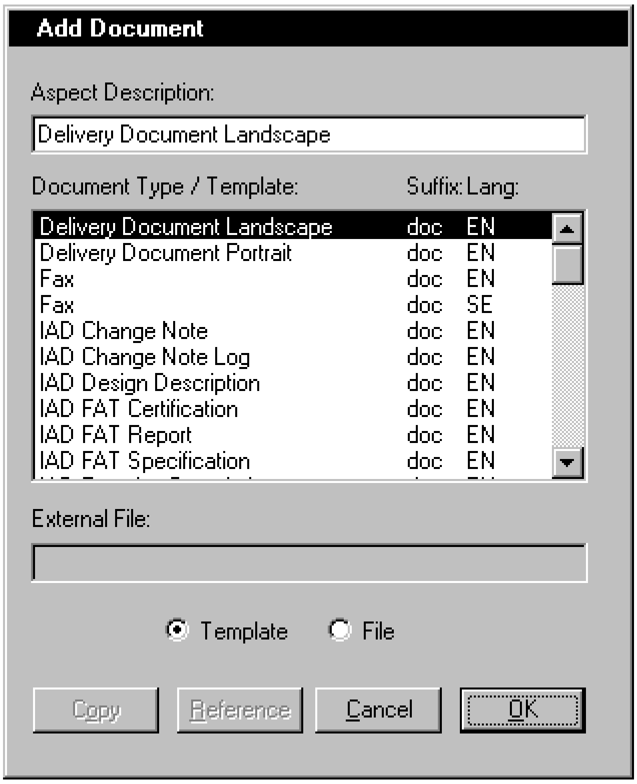
b. it is the copy of a template or an existing file - *referenced* non-dynamic documents are not made dynamic automatically.

For further explanations regarding *referenced* and *dynamic* documents see below.

- Press the **New** button in the *Object* window or alternatively select **New** from the right hand mouse button menu in the object's Aspect Area -
  this will pop-up the **New Aspect** dialog.
- Select the aspect type **Document** and press **OK -**
  this will pop-up the **Add Document** selection box for selection of a document type (see Figure 3-2).

There are three possibilities to select a base for the new document:

- By selecting a template (default)
- By copying an existing file
- By referencing an existing file



Aspect Description: Delivery Document Landscape

| Document Type / Template: | Suffix: | Lang: |
|---|---|---|
| Delivery Document Landscape | doc | EN |
| Delivery Document Portrait | doc | EN |
| Fax | doc | EN |
| Fax | doc | SE |
| IAD Change Note | doc | EN |
| IAD Change Note Log | doc | EN |
| IAD Design Description | doc | EN |
| IAD FAT Certification | doc | EN |
| IAD FAT Report | doc | EN |
| IAD FAT Specification | doc | EN |

External File:

● Template ○ File

*Figure 3-2.* ***Add Document*** *Selection Box*

**Create a new Document based on a Template**

Choosing this option results in the selected template to be copied under a new name to the project's working directory.

1. Select check button **Template** (selected by default).
2. Choose one of the templates from the selection list.
3. Modify the aspect description if required.
4. Press **OK.**

The new document aspect is now visible in the **Object** window.

For a more detailed discussion of templates and hints on how to use the **Binder** template to handle document packages please refer to Chapter 3.6.2 Configuration of Templates.

### Create a new Document as Copy of an existing File

Choosing this option results in the selected file to be copied under a new name to the project's working directory.

1. Select check button **File** - a **Browse For Document To Copy** dialog pops up (see Figure 3-3).
2. Navigate through the file system and select the file to be copied.
3. Press **Open.**
4. Modify the aspect description if required.
5. Press **OK.**

The new document aspect is now visible in the **Object** window.

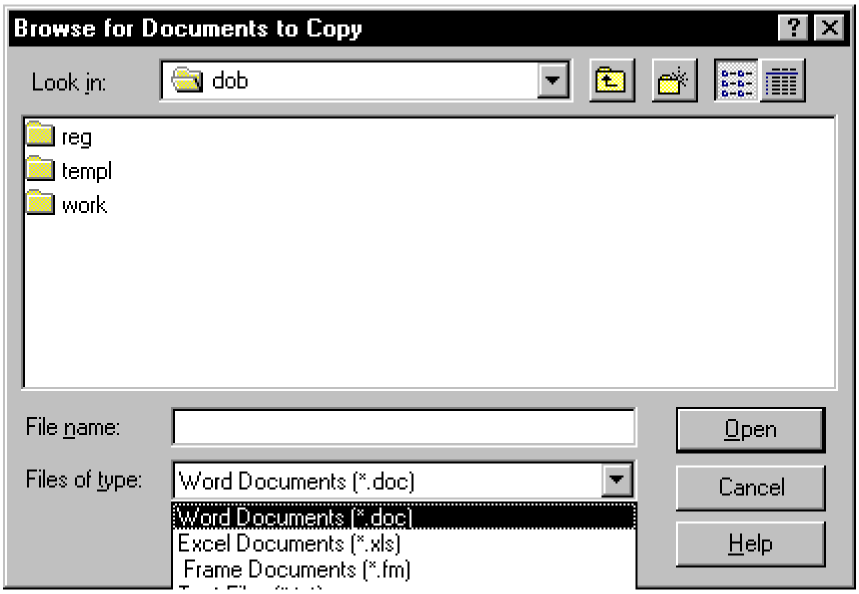


*Figure 3-3.* ***Browse for Document to Copy*** *Dialog*

### Create a new Document as Reference to an Existing File

Choosing this option results in the selected file to be referenced under a new name.

Note that the file itself is not copied to the working directory and is also not considered in the restoration of the project via the STB's Administration component if it resides outside the project's directory substructure.

1. Select check button **File** - a **Browse For Document To Reference** dialog pops up.
2. Navigate through the file system and select the file to be referenced.
3. Press **Open.**
4. Modify the aspect description if required.
5. Press **OK.**

The new document aspect is now visible in the **Object** window.

**WARNING**

Please note that if you *reference* files in directories outside the project's directory structure (i.e. files not underneath *advabld1***data***project*), these files are not considered when the project is backed up and are therefore lost when restoring the project on this or another machine!

### 3.5.3.2 Delete a Document

Select the document in the Structure Builder's **Object** window and press the **Delete** button. Alternatively select the document in the object's Aspect Area and select **Delete** from the context sensitive right hand mouse button menu.

The document aspect is deleted and not visible anymore in the **Object** window.

Deletion of document- and other aspects is restricted to users with Write access. Read Only users are not allowed to delete aspects (for information on how to give access rights to a user please refer to the Structure Builder's user manual).

Note that if the document consists of a file in the project's working directory (either as copy of a template or as copy of an existing file), the file is deleted as well.

If the document was only a *reference* to a file anywhere on the file system (either by creating the document as a reference or by attaching a file reference in the Document Builder application), the referenced file is not deleted, only the document aspect's administrative data in the database.

### 3.5.3.3 Copy a Document

This version of AdvaBuild Engineering Software does not support to copy individual aspects but only a complete object can be copied and by that all the object's aspects including document aspects.

In case of document aspects, the aspect's administrative data as well as the respective file is copied.

Duplication of document- and other aspects is restricted to users with Write access. Read Only users are not allowed to copy objects and therefore aspects (for information on how to give access rights to a user please refer to the Structure Builder's user manual).

To copy an object please follow these steps:

1. Select the object to be copied in the Structure Builder (for example in the Functional Structure).
2. Choose the menu entries **Copy** and **Paste** from the **Edit** menu or the context sensitive right hand mouse button menu or use the Drag & Drop technique. The copied object is now visible and its aspects can be seen by selecting the object and opening the ***Object*** window.

### 3.5.3.4 Open a Document

There are two possibilities (views) for opening a document:

a. Open the document file itself or

b. open the summary information about the document (administrative attributes about the document like document identity, titles, etc.), also called **Document Information.**

For more detailed information regarding (a) and (b) see below.

#### Update of Meta Data and Document Dynamic Data

In both cases, some meta data pertaining to the document and stored in the **Structure Builder'**s databases well as in the **Document Builder** database is updated before opening, provided the user has Write access. For Read Only users, these attributes are not updated before opening the document.The attributes updated are

- Name of the object the document belongs to (object name)
- Absolute reference designations (Func-, Loc-, Mount-, ControlDes).

The attribute *AspectDescription* is always up to date as it is automatically updated when modified in **Structure Builder.**

In dynamic Word or Excel documents, the dynamic data contained in the document is updated as well before opening the document (see also Chapter 3.5.4 How to Handle Dynamic Data in Documents).

#### a.1 Open a Single Document File

Select the document in the ***Object*** window of the Structure Builder and

- either press the **Open** button with the view **Document** selected or
- press the right mouse button and choose **Open** | **Document** or
- press **More** and choose **Open** | **Document.**

This will start the related application (for example MS Word) and open the file for editing. If you open several documents handled by the same application (for example MS Word) one after the other, either additional windows are opened in the related application or several instances of the application are created. This again depends on the tool associated with the document via the file extension.

### a.2 Open Multiple Document Files

Select a number of documents in the *Aspect Area* of an object in Structure Builder and from the context sensitive right hand mouse button menu

press **More** and choose **Open** | **Document.**

This will start the related applications (for example MS Word) and open all selected files in their respective applications.

### a.3 Open Document Files as Read Only User

As users with Read Only access are not allowed to modify document files or document meta data, the administrative document attributes are not updated before opening and a read-only copy of the document file is created in the *TEMP* directory allowing the user to view but not to modify the document contents.

### b.1 Open a Single Document Information Form

Select the document in the *Object* window of the Structure Builder and

- either press the **Open** button with the view **Summary** selected or
- press the right mouse button and choose **Open** | **Summary** or
- press **More** and choose **Open** | **Summary.**

This will open the **Document Information** form for this one document aspect. For more information please refer to Section 3.6.1.1, Open the Document Information Form.

### b.2 Open Document Information for Multiple Documents

Select a number of documents in the *Aspect Area* of an object in Structure Builder and from the context sensitive right hand mouse button menu

press **More** and choose **Open** | **Summary.**

This will open the **Document Information** form for *all* these document aspects.

### b.3 Open Document Information as Read Only User

As users with Read Only access are not allowed to modify document data, the administrative document attributes are not updated before opening and the **Document Information** is displayed with input-disabled fields allowing the user to view but not to modify the document data.

### 3.5.3.5 Print a Document

There are two possibilities (views) for printing a document:

a. print the document itself, i.e. the document contents or

b. print summary information about the document (administrative attributes pertaining to the document like document identity, titles, etc.).

For more detailed information regarding (a) and (b) see below.

**Update of Meta Data and Document Dynamic Data**

In both cases, some meta data pertaining to the document and stored in the **Structure Builder**'s databases well as in the **Document Builder** database is updated before printing, provided the user has Write access. For Read Only users, these attributes are not updated before printing the document.The attributes updated are

- the name of the object the document belongs to (object name)
- the absolute reference designations (Func-, Loc-, Mount-, ControlDes).

The attribute *AspectDescription* is always up to date as it is automatically updated when modified in **Structure Builder.**

In dynamic Word or Excel documents, the dynamic data contained in the document is updated as well before printing the document (see also Chapter 3.5.4 How to Handle Dynamic Data in Documents).

**a.1 Print Document Contents**

1. Select the document in the Structure Builder's *Object* window and press the **More** button or press the right button of your mouse.
2. Choose **Print** in the resulting pop-up menu.
3. Choose **Document** in the following pop-up menu.

This will prompt the related application (for example MS Word) to perform the Print command.

**Remark**:
Depending on the tool associated with the document (via the file extension), the print command may work or not. If the tool does not support to print a document from the **Structure Builder** / **Document Builder,** it must be printed within the application. In this case open the document (see below) and perform the print locally in the tool.

For MS Word and MS EXcel the Print command can easily be initiated from the Structure Builder's *Object* window.

### a.2 Print Multiple Document Files

Select a number of documents in the *Aspect Area* of an object in Structure Builder and from the context sensitive right hand mouse button menu

press **More** and choose **Print** | **Document.**

This will start the related applications (for example MS Word, MSExcel, NotePad) and print all selected files using their respective applications.

### a.3 Print Document Files as Read Only User

As users with Read Only access are not allowed to modify document data, the administrative document attributes are not updated before printing.

### b.1 Print Summary Information

1. Select the document in the Structure Builder's *Object* window and press the **More** button or press the right button of your mouse.
2. Choose **Print** in the pop-up menu.
3. Choose **Summary** in the following pop-up menu.

For an impression of the summary information's layout please refer to Figure 3-71 in Section 3.6.1.5, Open or Print Documents.

### b.2 Print Summary Information for Multiple Documents

Select a number of documents in the *Aspect Area* of an object in Structure Builder and from the context sensitive right hand mouse button menu

press **More** and choose **Print** | **Summary.**

### b.3 Print Summary Information as Read Only User

As users with Read Only access are not allowed to modify document data, the administrative document attributes are not updated before printing.

## 3.5.4 How to Handle Dynamic Data in Documents

### 3.5.4.1 Introduction to Dynamic Data

**What is Dynamic Data?**

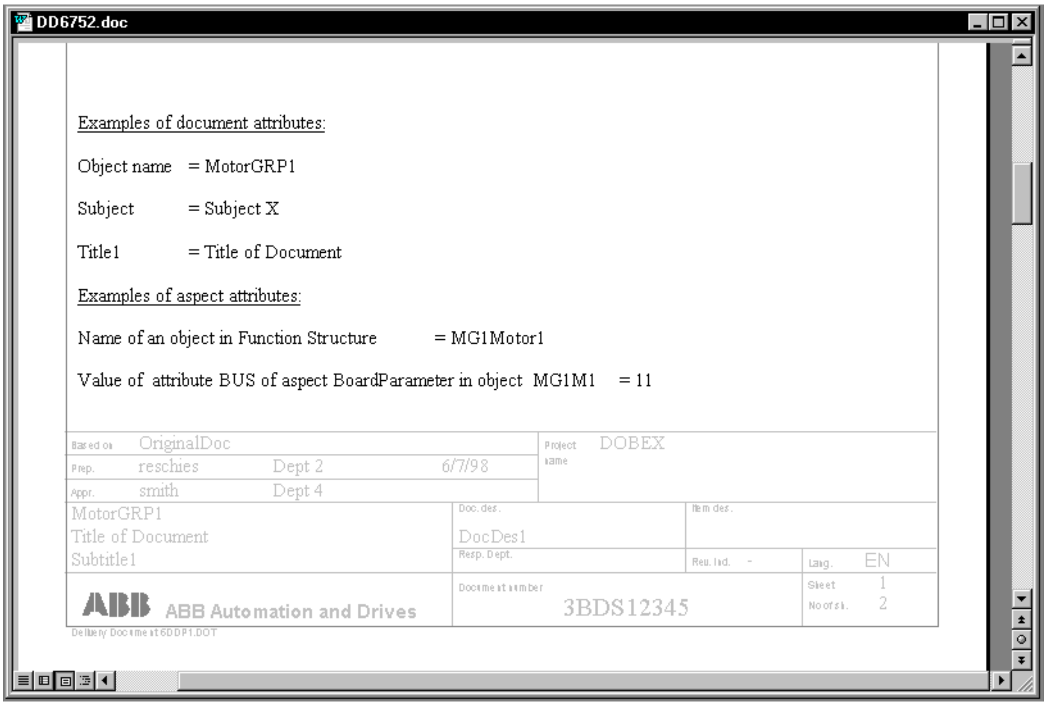
Basically, so-called dynamic data consists of variables inserted anywhere in the document's text, header or footer. These variables are connected to a data source and are automatically replaced with actual values. For further information see below.

**What is a Dynamic Document?**

A document supporting the insertion of Dynamic Data.

**Example of Dynamic Document**

In the document depicted below, *document* attributes have been inserted in the footer and the text, examples of inserted *aspect* attributes are given in the text. For a more detailed example see Chapter 3.5.4.6 Example of Generic Dynamic Document



Examples of document attributes:

Object name = MotorGRP1

Subject = Subject X

Title1 = Title of Document

Examples of aspect attributes:

Name of an object in Function Structure = MG1Motor1

Value of attribute BUS of aspect BoardParameter in object MG1M1 = 11

Based on OriginalDoc
Prep. reschies Dept 2 6/7/98
Appr. smith Dept 4
Project name DOBEX
MotorGRP1
Title of Document
Subtitle1
Doc. des. DocDes1
Item des.
Resp. Dept.
Rev. Ind. -
Lang. EN
Document number 3BDS12345
Sheet 1
No of sh. 2

*Figure 3-4. Example of a Document Containing Dynamic Data*

### What Types of Dynamic Data are available?

Two types of Dynamic Data are available:

1. **document attributes** (for example a document's *Title1* or *Subject*)
2. **aspect attributes,** attributes of Parameter aspect types or dedicated attributes of Structure Builder (for example an object name or the value of a BoardParameter's *BUS* aspect)

### Which documents provide Dynamic Data?

Only Word or Excel documents.

**Word and Excel**: supports both document and aspect attributes.

Note that all documents based on Document Builder templates or *copied* from files are dynamic documents (*referenced* files are dynamic only if the file itself is dynamic).

**NOTE**

Even if a template or a file to be copied is non-dynamic originally, it is made dynamic by Document Builder before opening it for modification.

### How is Dynamic Data in Documents Updated?

Whenever a document is opened or printed by a user with Write access, the dynamic data inserted in this document by means of variables is automatically updated, provided the update of dynamic data is activated - see Section 3.6.5, Configuration of Dynamic Document Data Update

The actual values replacing the variables are retrieved

- in case of document attributes: from the **Document Builder**'s database which in turn is updated beforehand by getting updated attribute values from **Structure Builder** or
- in case of aspect attributes: from the **Structure Builder**'s database or from the **Parameter Builder**'s database.

The update works in one direction only: from the respective database towards the document. It is not possible to change values in the document and have the database updated accordingly.

The update of dynamic data can be activated/deactivated in the **Document Information Form** (see Section 3.6.5, Configuration of Dynamic Document Data Update)

### How is Dynamic Data Inserted into Documents?

Please refer to

Chapter 3.5.4.2   Insertion of Document Attributes into a Document

Chapter 3.5.4.3   Insertion of Aspect Attributes into a Document

Chapter 3.6.2.4   Create a New Dynamic Word Template

Chapter 3.6.2.5   Create a New Dynamic Excel Template.

### Which Restrictions Apply to Documents with Dynamic Data?

For the dynamic data in a document to be updated automatically, the document has to reside in the project's working directory. For usage of aspect attributes, some further restrictions might apply (see below).

### When to use Dynamic Data?

Dynamic data should be inserted into a document if you refer to document attribute values or aspect attribute values which might be modified in the course of the engineering process and should be updated automatically in the document.

- Use *document* attributes when you want to include document meta data in the document itself, either in normal text or in headers/footers or in tables. Some of Document Builder's predefined templates use document attributes to form part of a document footer.
- Use *aspect* attributes when you want to include values of aspect instance attributes in the document itself, either in normal text or in headers/footers or in tables.

### How to Create Generic Dynamic Documents?

Consider the following scenario:

1. There is a *library* project in which you build complex generic structures of objects containing all sorts of aspects, including documents.
2. There is a *working* project in which parts of the library project are used by instancing them via the **Structure Builder | Project| Import** utility, which is basically done by copying the objects and their aspects from the library project to the working project.
3. The documents in the library project are technical descriptions of a kind and contain referenced aspect attributes describing various aspects in project substructures.

Of course, you want the values of the aspect attributes to be updated correctly not only in the documents of the library project but also in the copied documents of the working project.

- The **problem** is that instanced and therefore copied objects in the working project have a different name than the original objects in the library project, so if there is a reference to, lets say object *X* and of this object the aspect *Y* and of this aspect the attribute *Z*, the reference cannot be resolved in the working project's document as there the object is not named *X* but maybe *A*.
- The **solution** is to take advantage of the different name categories of the **Basic Property** aspect available in **Structure Builder**. The objects in the library project should have *two* Basic Properties:
    - a **Basic Property** of category **Customer ID** (in our example this contains the **Name** attribute set to *X*)
    - a **Basic Property** of category **Instance ID** (contains the **Name** attribute set to maybe *xxx*)

  In the document, we now do *not* reference the object via category **Customer ID** because the value of the Customer ID.Name attribute changes from *X* to *A* in the copied object, but via category **Instance ID** because here the value of the Name attribute remains the same: *xxx* - and so, the inserted aspect references in the copied document of the working project can be resolved and updated with actual values, though the objects visible in Structure Builder have completely different names.

Please note that this works correctly only if the Name attributes of the BasicProperty’s Instance ID’s contain *unique* names, at least in regard to the substructure in which the references are located.

**NOTE**

**Note that for generic dynamic documents, only the** *relative* **format of the reference string can be used, not the** *absolute* **format!**

For a detailed explanation of the two formats please refer to Chapter 3.5.4.3   Insertion of Aspect Attributes into a Document.

For an example dynamic document please refer to Chapter 3.5.4.6   Example of Generic Dynamic Document.

**What Happens in Case of Document Transfer?**

If you copy a document from the project’s working directory to another environment, for example to your laptop for local processing, dynamic data is not effected, i.e. the values written to the document during the last update still exist.

Of course, in this scenario there is no possibility to update the dynamic data in your document - the update procedure will display an error message which in this case can be ignored.

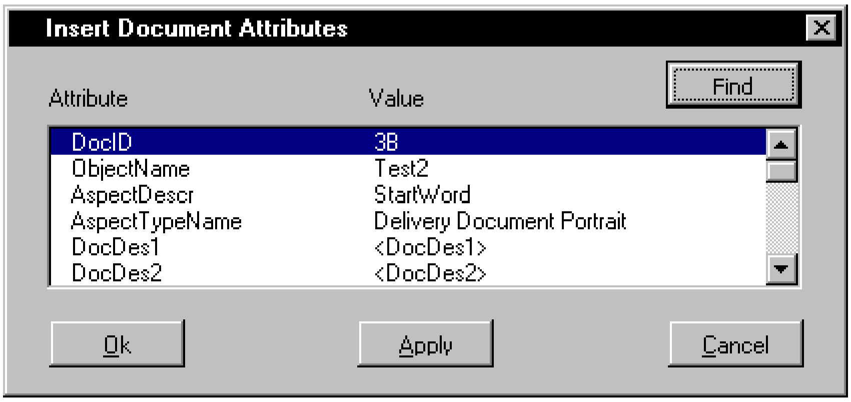
When you copy the file back to the project environment, the update of dynamic data is automatically activated again. So the next time you open the document, the update will be performed again.

### 3.5.4.2  Insertion of Document Attributes into a Document

To insert document attributes into a Word or Excel document,

select menu item **Dynamic Data | Insert Document Attributes** or, in case of Word only, select the same item from the context sensitive right hand mouse button menu

A selection box as shown in Figure 3-5 pops up, showing available attributes and their values.



| Attribute | Value |
|---|---|
| DocID | 3B |
| ObjectName | Test2 |
| AspectDescr | StartWord |
| AspectTypeName | Delivery Document Portrait |
| DocDes1 | <DocDes1> |
| DocDes2 | <DocDes2> |

*Figure 3-5. **Insert Document Attributes** Selection Box*

To insert an attribute into the text or a cell, simply chose it from the list and press **OK** or **Apply**. To be able to find out the usage of the Document attributes in the document select the wanted attribute in the **Insert Document Attributes** selection box and press **Find** button, cursor will be placed there if there is an attribute.

### 3.5.4.3 Insertion of Aspect Attributes into a Document

To insert aspect attributes into a Word or Excel document,

> select menu item **Dynamic Data | Insert Aspect Attributes** or select the same item from the context sensitive right hand mouse button menu

A dialog box as shown in Figure 3-7 pops up.

**Types of Aspect Attributes and Data Sources**

There are two types of aspect attributes which can be inserted into a document:

1. Attributes of a **parameter** aspects, stored and retrieved from the **Parameter Builder**
2. Object and structure attributes values, stored and retrieved from the **Structure Builder**.

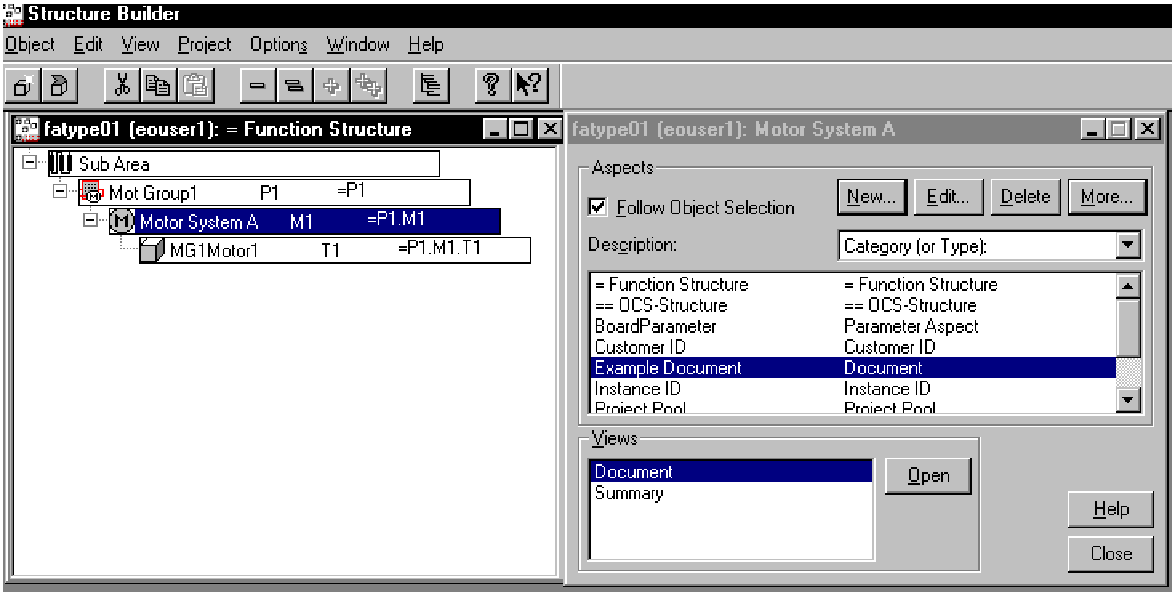
### Types of Reference Strings

To retrieve the value for an aspect attribute, a **parameter reference**, also called a **reference string**, has to be defined. The reference string contains all information necessary to identify and access a single attribute of an aspect contained in an object. Three different formats of references are supported:

1. Relative reference to the same object
2. Relative reference to another (related) object
   - by name (CHILD and PARENT)
   - by absolute reference designation (CHILD only)
3. Absolute reference to any object.

The reference string adheres to the rules described in *Parameter Builder User's Guide*, Appendix A.

The reference string examples below base on the Advant objects and aspects placed in the Function Structure window see Figure 3-6. Note, the Function Structure window is set to show the Instance ID Name and not the Customer ID name what the default behavior would be. The 'Motor System A' object covers the 'Example Document' where the three respectively four references are included.


Structure Builder
Object Edit View Project Options Window Help
fatype01 (eouser1): = Function Structure
fatype01 (eouser1): Motor System A
Aspects
New...
Edit...
Delete
More...
Description:
Views
Open
Help
Close

Sub Area
Mot Group1 P1 =P1
Motor System A M1 =P1.M1
MG1Motor1 T1 =P1.M1.T1

☑ Follow Object Selection

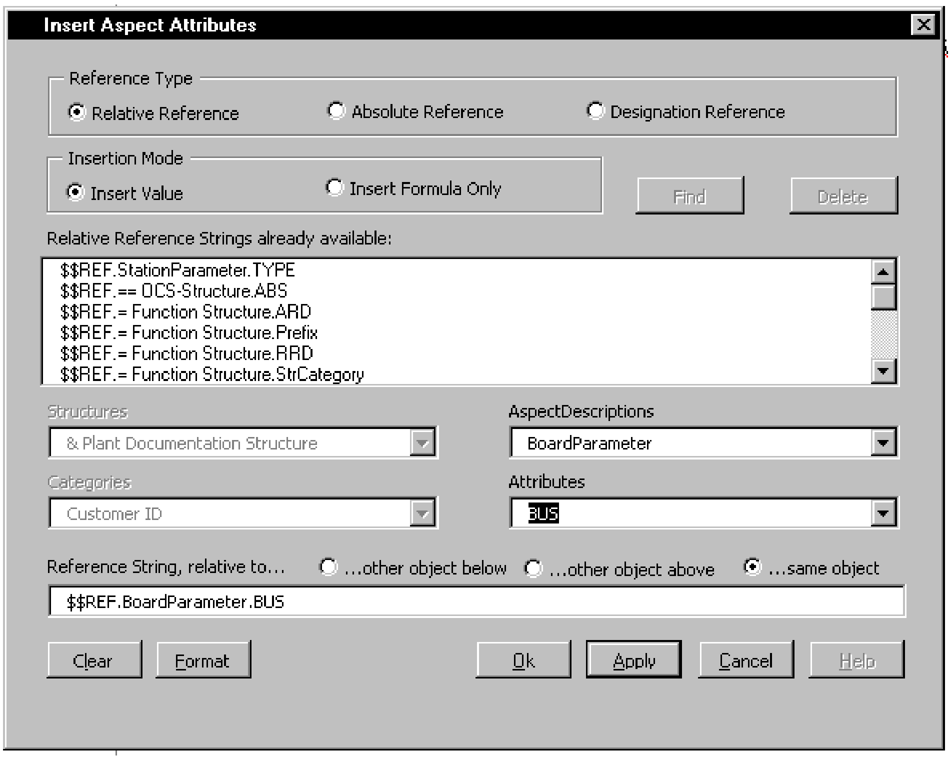
Category (or Type):

| | |
|---|---|
| = Function Structure | = Function Structure |
| == OCS-Structure | == OCS-Structure |
| BoardParameter | Parameter Aspect |
| Customer ID | Customer ID |
| Example Document | Document |
| Instance ID | Instance ID |
| Project Pool | Project Pool |

Document
Summary

*Figure 3-6. Advant Objects Placed in Function Structure*

### Relative Reference to the Same Object



Insert Aspect Attributes

Reference Type: ● Relative Reference ○ Absolute Reference ○ Designation Reference

Insertion Mode: ● Insert Value ○ Insert Formula Only

Relative Reference Strings already available:

$$REF.StationParameter.TYPE
$$REF.== OCS-Structure.ABS
$$REF.= Function Structure.ARD
$$REF.= Function Structure.Prefix
$$REF.= Function Structure.RRD
$$REF.= Function Structure.StrCategory

Structures: & Plant Documentation Structure

Categories: Customer ID

AspectDescriptions: BoardParameter

Attributes: BUS

Reference String, relative to... ○ ...other object below ○ ...other object above ● ...same object

$$REF.BoardParameter.BUS



*Figure 3-7. Insert Aspect Dialog Box, Relative Reference to the Same Object*

**Format of a relative reference string:**

$$REF.<AspectDescription>.<Attribute>

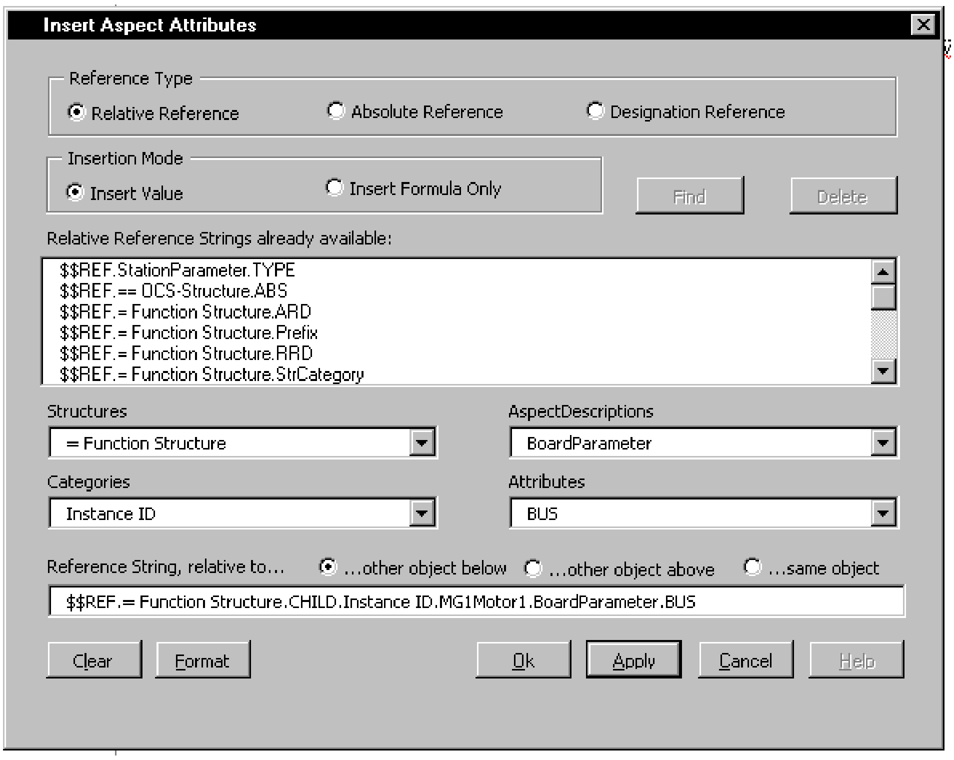
**Example of a relative reference string:**

$$REF.BoardParameter.BUS

### Relative Reference to Another (related) Object (by name)

CHILD (target object is placed somewhere below in the structure):

If this format is to be used, the document into which the aspect attribute is to be inserted must belong to a **root** object of the object the referenced aspect belongs to, i.e. it must belong to a parent object or a grandparent object or a greatgrandparent object and so on. The object will be identified by name (EOName).



Insert Aspect Attributes

Reference Type
● Relative Reference ○ Absolute Reference ○ Designation Reference

Insertion Mode
● Insert Value ○ Insert Formula Only

Relative Reference Strings already available:

```
$$REF.StationParameter.TYPE
$$REF.== OCS-Structure.ABS
$$REF.= Function Structure.ARD
$$REF.= Function Structure.Prefix
$$REF.= Function Structure.RRD
$$REF.= Function Structure.StrCategory
```

Structures: = Function Structure

AspectDescriptions: BoardParameter

Categories: Instance ID

Attributes: BUS

Reference String, relative to... ● ...other object below ○ ...other object above ○ ...same object

`$$REF.= Function Structure.CHILD.Instance ID.MG1Motor1.BoardParameter.BUS`

*Figure 3-8. Insert Aspect Dialog Box, Relative Reference Below*

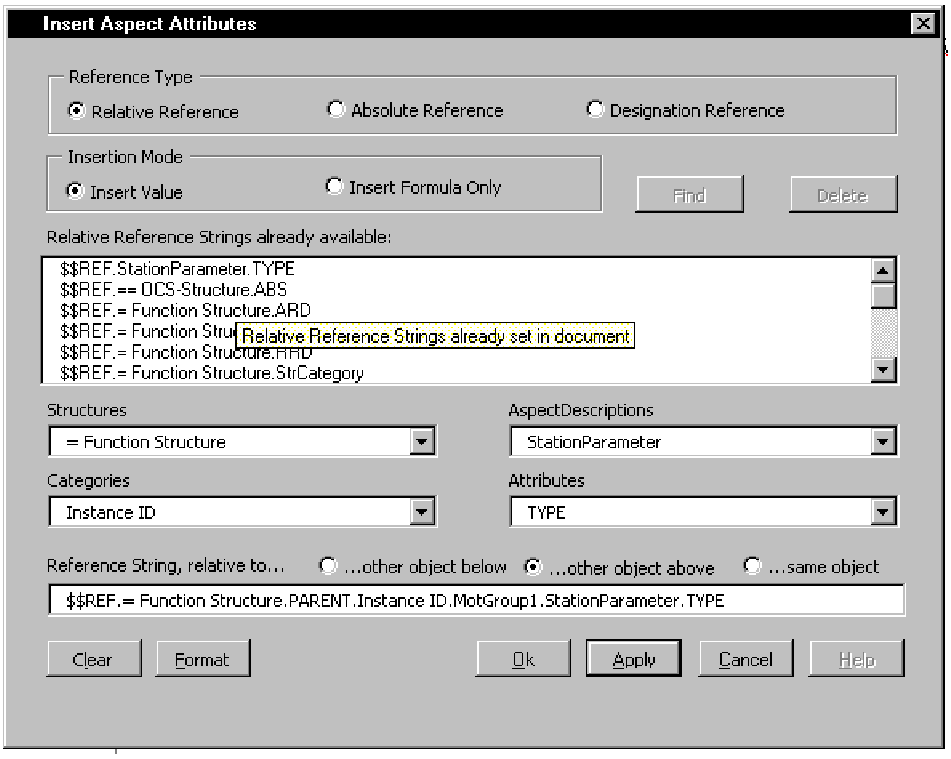
**Format of a relative reference string:**

$$REF.<Structure>.CHILD.<Category>.<EOName>.<AspectDescription>.<Attribute>

**Example of a relative reference string:**

$$REF.= Function Structure.CHILD.Instance ID.MG1Motor1.BoardParameter.BUSPARENT (target object is placed somewhere above in the structure):
If this format is to be used, the document into which the aspect attribute is to be inserted must belongs to an object above of the object the referenced aspect belongs to.

PARENT (target object is placed somewhere above in the structure):
If this format is to be used, the document into which the aspect attribute is to be inserted must belongs to an object above of the object the referenced aspect belongs to.



Reference Type: ● Relative Reference ○ Absolute Reference ○ Designation Reference

Insertion Mode: ● Insert Value ○ Insert Formula Only

Relative Reference Strings already available:

```
$$REF.StationParameter.TYPE
$$REF.== OCS-Structure.ABS
$$REF.= Function Structure.ARD
$$REF.= Function Stru
$$REF.= Function Structure.RRD
$$REF.= Function Structure.StrCategory
```

Structures: = Function Structure

AspectDescriptions: StationParameter

Categories: Instance ID

Attributes: TYPE

Reference String, relative to... ○ ...other object below ● ...other object above ○ ...same object

$$REF.= Function Structure.PARENT.Instance ID.MotGroup1.StationParameter.TYPE

*Figure 3-9. Insert Aspect Dialog Box, Relative Reference Above*

**Format of a relative reference string:**

$$REF.<Structure>.PARENT.<Category>.<EOName>.<AspectDescription>.<Attribute>

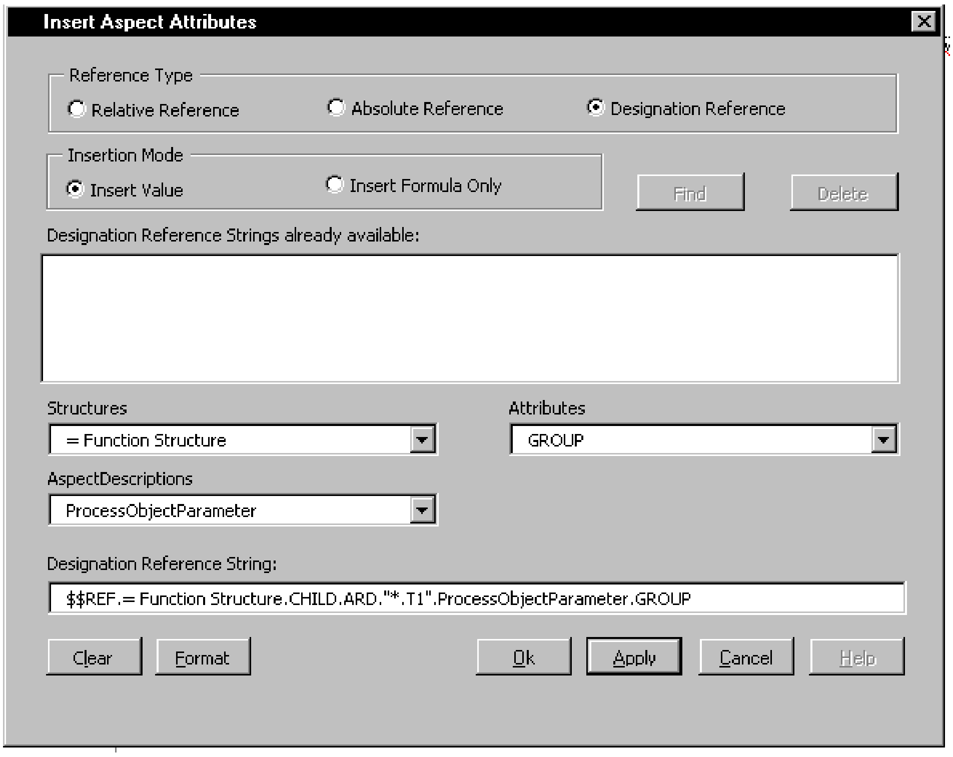
**Example of a relative reference string:**

$$REF.= Function Structure.PARENT.Instance ID.Mot Group1.StationParameter.TYPE

### Relative Reference to Another (related) Object (by designation)

CHILD (target object is placed somewhere below in the structure):

Here the object the referenced aspect belongs to will be identified by absolute reference designation or the tail end part of it in connection with wildcards. Designation has to be unique in the corresponding sub structure. It must be enclosed with quotation marks. The wildcards character “*” in front of the designation is possible and stands for one or more then one relative reference designations.



Reference Type
○ Relative Reference ○ Absolute Reference ● Designation Reference

Insertion Mode
● Insert Value ○ Insert Formula Only

Structures: = Function Structure

Attributes: GROUP

AspectDescriptions: ProcessObjectParameter

Designation Reference String: $$REF.= Function Structure.CHILD.ARD."*.T1".ProcessObjectParameter.GROUP

*Figure 3-10. Insert Aspect Dialog Box, Designation Reference, Relative Reference Below*

**Format of a relative reference string:**

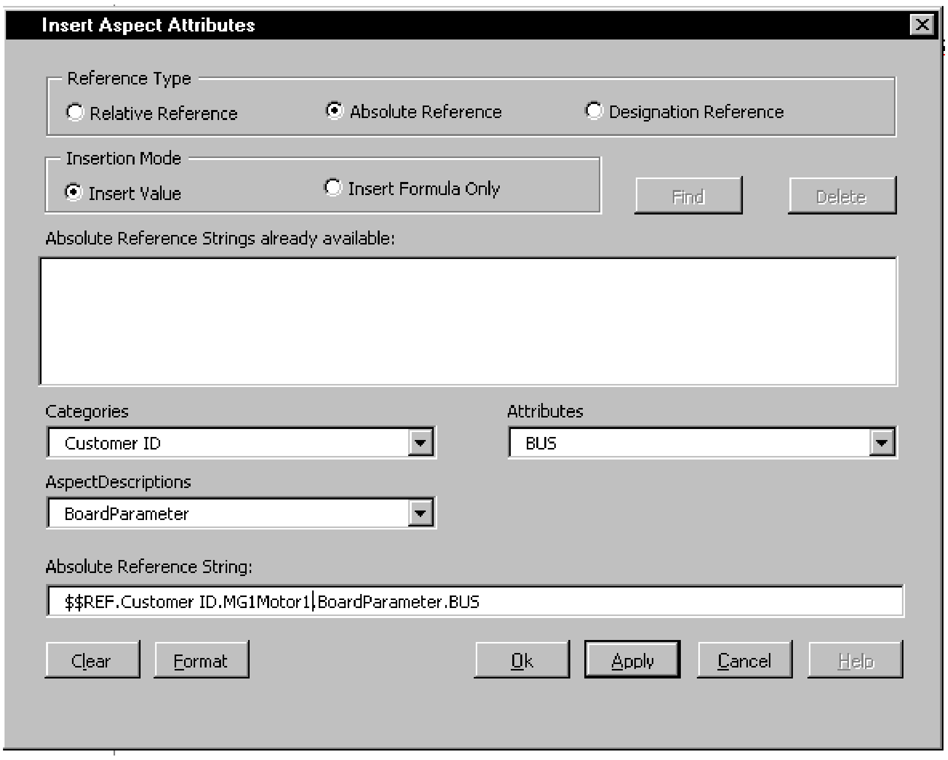
$$REF.<Structure>.CHILD.ARD.”<designation>”.<AspectDescription>.<Attribute>

**Example of a relative reference string:**

$$REF.= Function Structure.CHILD.ARD.”*.T1”.ProcessObjectParameter.GROUP

### Absolute Reference Format

If this format is to be used, the object the referenced aspect belongs to can be any project object. To work with the absolute format, choose **Absolute Reference** as reference type.



Reference Type: ● Absolute Reference

Insertion Mode: ● Insert Value

Categories: Customer ID

Attributes: BUS

AspectDescriptions: BoardParameter

Absolute Reference String: $$REF.Customer ID.MG1Motor1.BoardParameter.BUS

*Figure 3-11. Insert Aspect Dialog Box, Absolute Reference*

**Format of an absolute reference string:**

$$REF.<Category>.<EOName>.<AspectDescription>.<Attribute>

**Example of an absolute reference string:**

$$REF.Customer ID.MG1Motor1.BoardParameter.BUS

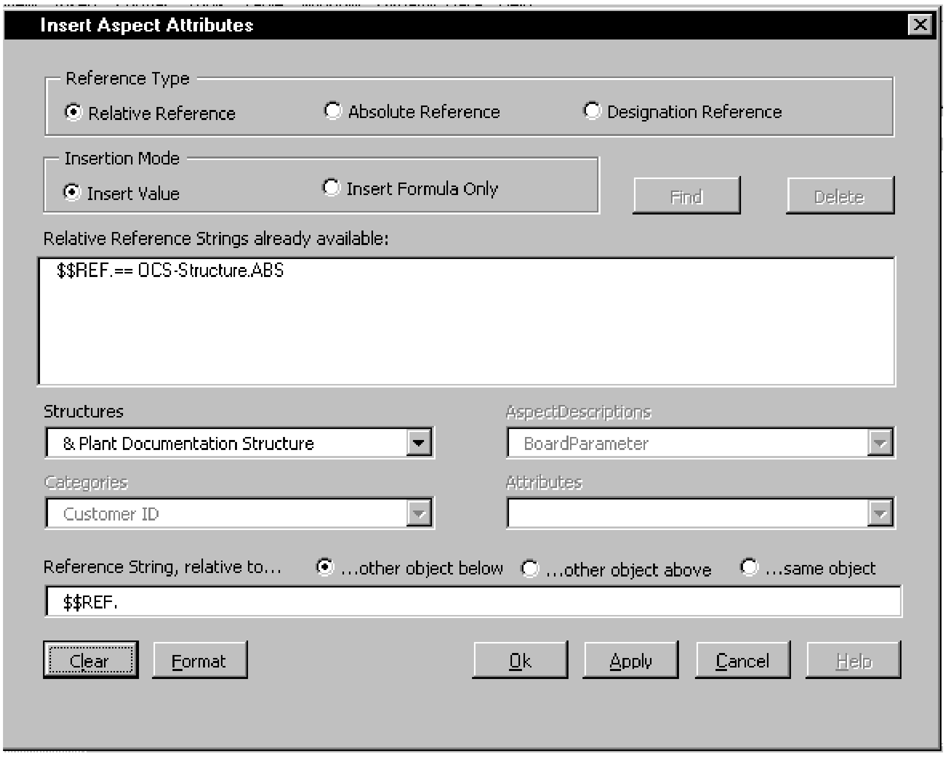
### User Interface Insert Aspect Attributes Dialog

- When constructing a reference string, the user can
  - simply type a new reference string himself or
  - get some help in constructing the reference string or
  - revert to reference strings already available in the document.

- **Apply** or **Ok** button force the system to retrieve the referenced value and to insert into document.
- Normally, when inserting an aspect attribute by formulating a reference string, the value of the aspect attribute is retrieved immediately and inserted at cursor point. If the value cannot be retrieved, e.g. because the aspect described does not exists, nothing is inserted and an error message appears. To provide the possibility to prepare documents in advance, it is possible to insert aspect attributes in a so-called **Insert Formula only**-mode, even if no actual value could be retrieved is the reference string inserted into document to be reevaluated at a later stage when the value is possibly available. As default behavior the **Insert Value**-mode is checked.
- Aspect attributes already inserted into document are visible as reference strings in the list box headed "Absolute/ Relative Reference Strings already available". The **Find** button is meant to be used to find out the usage of one of these references in the document. Press the button which then offers the possibility to FindFirst/ FindNext occurrence of this string.
- To be able to delete one of these references throughout the document, select the reference string in list box and press **Delete** button. The reference string itself and all occurrences of this string, i.e. all inserted values.
- The reference string under construction is in field **Relative Reference String, Absolute Reference String** or **Designation Reference String** respectively.
- References already available in the respective format are listed in the box **Relative Reference Strings already available** and can be selected by simply clicking on them.
- In **Relative/Absolute Reference String**, the format for the string is given to provide some help for the user. This format can always be restored by pressing the **Format** button. Parameters set in angular brackets, for example <Structure> or <Category> can be replaced by selecting an item from the respective list box, for example from **Structures** or **Categories**.

  As long as the overall structure of the reference string, i.e. the different required substrings separated by dots, is intact, parts of the string can be repeatedly replaced by selecting another item from one of the list boxes, for example you can select another category by simply selecting another item from the **Categories** list.
- Once an aspect description has been chosen from the list box **AspectDescriptions**, the list box **Attributes** is automatically filled with attributes pertaining to this type.
- Of course, aspect descriptions displayed in **AspectDescriptions** can be only a selection of standard aspect instance names, if the aspect to be referenced has its own unique name this has to be typed manually.
- Also, the name of the object (parameter <EOName>) has to be typed manually.
- Advanced users who want to type the complete reference string themselves can press the **Clear** button to clear the input field. Even in this case, help is provided as the list boxes are available but grayed out according to the order in which substrings are required for the reference string.

  In Figure 3-12, the Clear button has been pressed. Note that the list boxes **Categories**, **AspectDescriptions** and **Attributes** are grayed out but that the list box **Structures** is available as this is the first substring required.



Insert Aspect Attributes

Reference Type: ● Relative Reference ○ Absolute Reference ○ Designation Reference

Insertion Mode: ● Insert Value ○ Insert Formula Only

Relative Reference Strings already available:

$$REF.== OCS-Structure.ABS

Structures: & Plant Documentation Structure

AspectDescriptions: BoardParameter

Categories: Customer ID

Attributes:

Reference String, relative to... ● ...other object below ○ ...other object above ○ ...same object

$$REF.

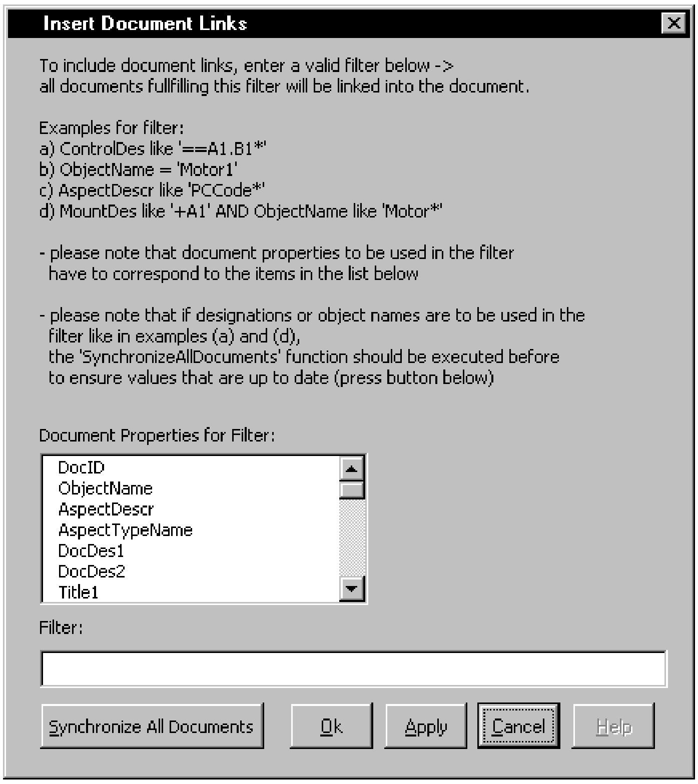
*Figure 3-12.* ***Insert Aspect Attributes Dialog*** *Box, Clear Button Pressed*

## 3.5.4.4 Insertion of Document Links

The basic idea of the **Document Link** function is to provide the means by which a container document receives the contents of a group of documents belonging to Advant object aspects residing in the same project. The container document has to be a Word document. The linked documents can be Word documents, Excel Sheets or simple text files containing all sort of data, even parameter references or just program code. The significant thing is that

- they are aspects of project Advant objects and
- they can be logically grouped together by applying a filter condition,
- the parameter references inside the linked documents can be refreshed, executed from container document,
- the filter condition to retrieve the linked documents can be executed at any time.

To insert a **Document Links** into a Word document select menu item **Dynamic Data** | **Insert Document Links** or select the same item from the context sensitive right hand mouse button menu. A dialog as shown in Figure 3-13 pops up.



To include document links, enter a valid filter below ->
all documents fullfilling this filter will be linked into the document.

Examples for filter:
a) ControlDes like '==A1.B1*'
b) ObjectName = 'Motor1'
c) AspectDescr like 'PCCode*'
d) MountDes like '+A1' AND ObjectName like 'Motor*'

- please note that document properties to be used in the filter
have to correspond to the items in the list below

- please note that if designations or object names are to be used in the
filter like in examples (a) and (d),
the 'SynchronizeAllDocuments' function should be executed before
to ensure values that are up to date (press button below)

Document Properties for Filter:

- DocID
- ObjectName
- AspectDescr
- AspectTypeName
- DocDes1
- DocDes2
- Title1

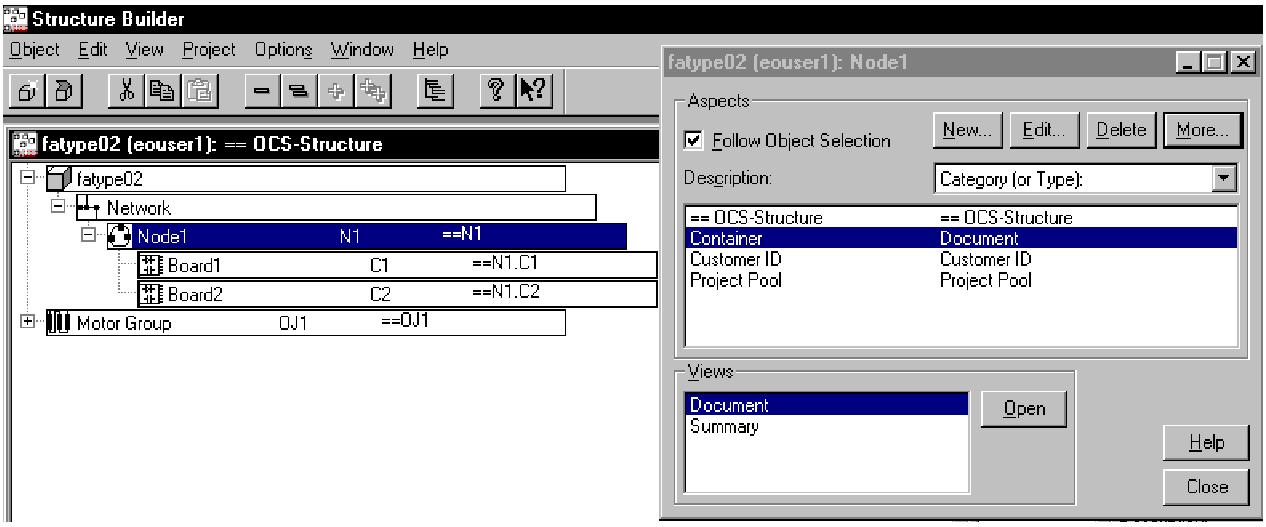
Filter:

*Figure 3-13. Insert Document Links Dialog*

Field **Filter** offers the possibility to formulate a filter describing the group of documents which should be linked. As document properties kept in the Document Builder database are to be used in the filter condition, a list of valid properties is displayed from which items can be selected. Please note that the syntax of the filter condition follows SQL syntax.

### Example:

In the OCS Structure are placed, a Node object named 'Node1' with the absolute reference '==N1' and a 'container' document aspect and two analog output board objects 'Board1', 'Board2' below. Every board object has a document aspect and a BoardParameter aspect. The document aspect contains DB source code where for example the value of the IMPL property retrieved from the corresponding BoardParameter aspect by parameter reference. The absolute reference designation of the boards are '==N1.C1' for Board1 and '==N1.C2' for Board2. The aspect description of the DB source code documents are 'DBSourceBoard1' and 'DBSourceBoard2' see Figure 3-14.


Structure Builder
Object Edit View Project Options Window Help
fatype02 (eouser1): == OCS-Structure
fatype02 (eouser1): Node1
Aspects
Follow Object Selection
New... Edit... Delete More...
Description:
Category (or Type):
Views
Open
Help
Close

fatype02
Network
Node1 N1 ==N1
Board1 C1 ==N1.C1
Board2 C2 ==N1.C2
Motor Group OJ1 ==OJ1

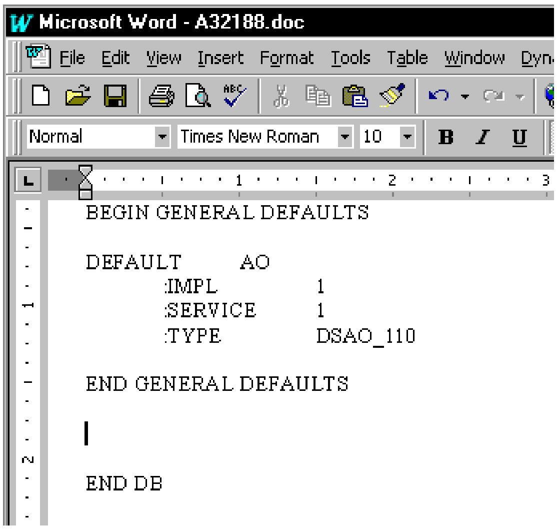
☑ Follow Object Selection

| Description: | Category (or Type): |
|---|---|
| == OCS-Structure | == OCS-Structure |
| Container | Document |
| Customer ID | Customer ID |
| Project Pool | Project Pool |

Views: Document, Summary

*Figure 3-14. Advant Objects in OCS-Structure*

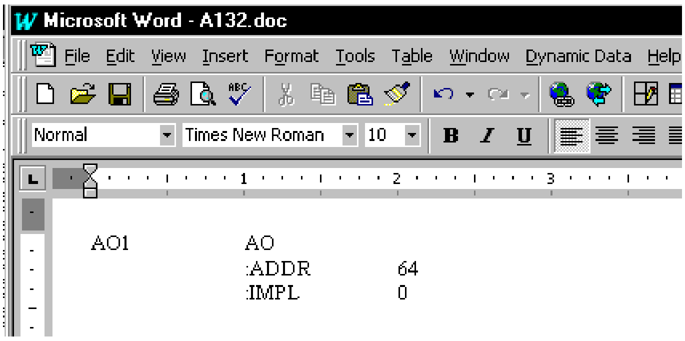
The Container document could look like (it is recommended to use a frameless Word template, blank sheet as container document).


Microsoft Word - A32188.doc
File Edit View Insert Format Tools Table Window Dyn
Normal
Times New Roman
10
B I U

```
BEGIN GENERAL DEFAULTS

DEFAULT       AO
          :IMPL          1
          :SERVICE       1
          :TYPE          DSAO_110

END GENERAL DEFAULTS



END DB
```

*Figure 3-15. Container Document Without Links*

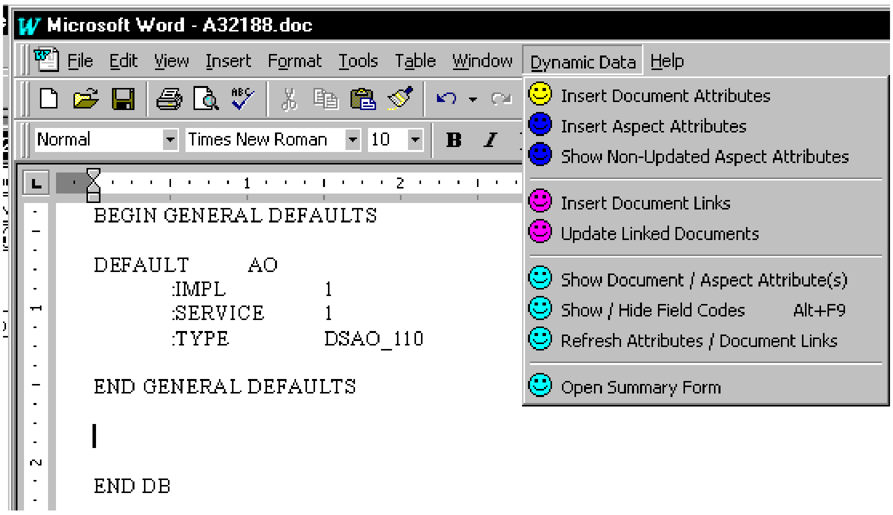
Example for a DB source code document see Figure 3-16. By the way, the value ’0’ of ’IMPL’ was retrieved by relative reference to the BoardParameter aspect:


Microsoft Word - A132.doc
File Edit View Insert Format Tools Table Window Dynamic Data Help
Normal
Times New Roman
10

```
AO1            AO
               :ADDR          64
               :IMPL          0
```

*Figure 3-16. Linked Document ’DBSourceBoard1’*

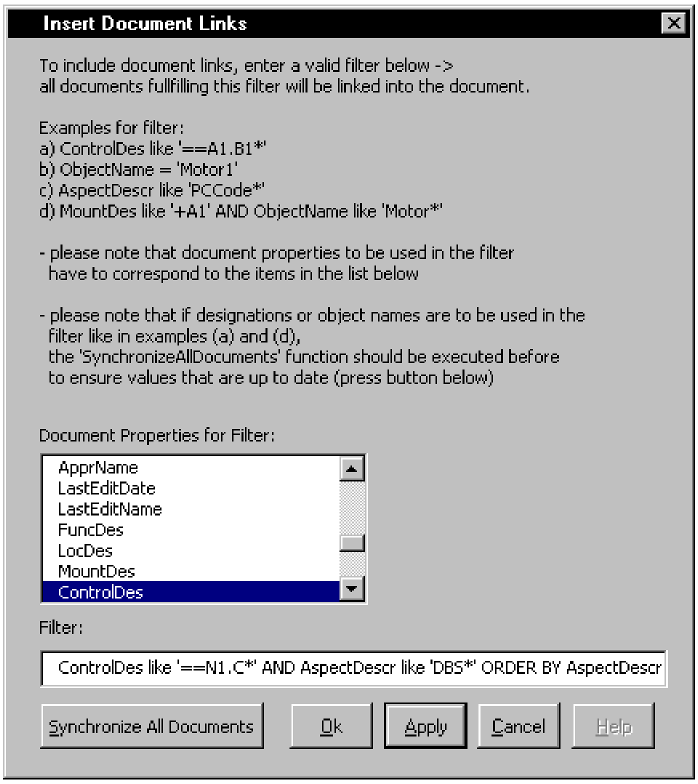
Place the insertion point in the container document see Figure 3-15 and select menu item **Dynamic Data** | **Insert Document Links see** Figure 3-17.


Microsoft Word - A32188.doc
File Edit View Insert Format Tools Table Window Dynamic Data Help
Normal
Times New Roman
10
Insert Document Attributes
Insert Aspect Attributes
Show Non-Updated Aspect Attributes
Insert Document Links
Update Linked Documents
Show Document / Aspect Attribute(s)
Show / Hide Field Codes Alt+F9
Refresh Attributes / Document Links
Open Summary Form

```
BEGIN GENERAL DEFAULTS

DEFAULT      AO
      :IMPL          1
      :SERVICE       1
      :TYPE          DSAO_110

END GENERAL DEFAULTS


END DB
```

*Figure 3-17. Dynamic Data, Insert Document Links*

Select **Insert Document Links** and formulate the filter condition as in Figure 3-18.



Insert Document Links

To include document links, enter a valid filter below ->
all documents fullfilling this filter will be linked into the document.

Examples for filter:
a) ControlDes like '==A1.B1*'
b) ObjectName = 'Motor1'
c) AspectDescr like 'PCCode*'
d) MountDes like '+A1' AND ObjectName like 'Motor*'

- please note that document properties to be used in the filter
have to correspond to the items in the list below

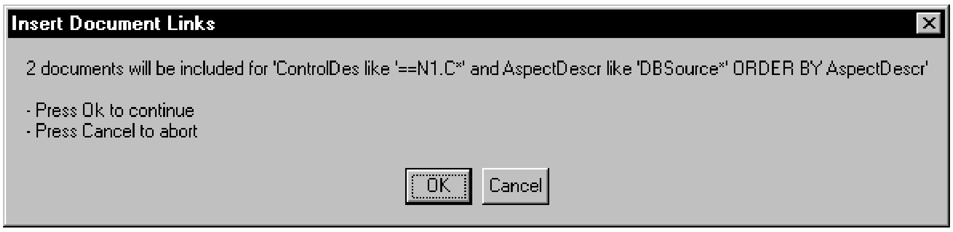
- please note that if designations or object names are to be used in the
filter like in examples (a) and (d),
the 'SynchronizeAllDocuments' function should be executed before
to ensure values that are up to date (press button below)

Document Properties for Filter:

Filter: ControlDes like '==N1.C*' AND AspectDescr like 'DBS*' ORDER BY AspectDescr

*Figure 3-18. Filter Condition*

After pressing Ok or Apply, the following dialog appears, informing about the numbers of documents found according to the filter (it is advisable to use Apply rather than Ok because in this case the dialog box with the filter entered will remain open - this could be useful when a typing error occurred or no matching documents were found and the filter condition has to be reformulated). There is also the possibility to cancel the action.



Insert Document Links

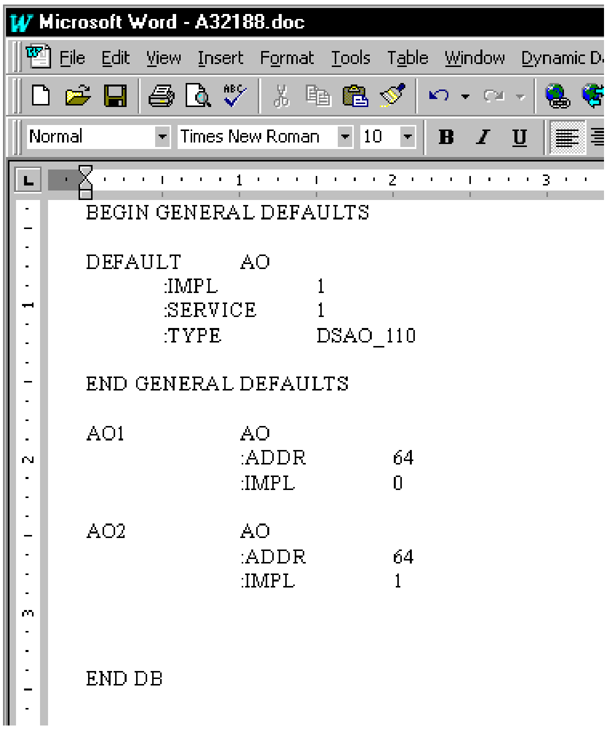
2 documents will be included for 'ControlDes like '==N1.C*' and AspectDescr like 'DBSource*' ORDER BY AspectDescr'

- Press Ok to continue
- Press Cancel to abort

*Figure 3-19. Selected Documents Confirmation Dialog*

The ORDER BY clause was used to get the boards in a sorted order.

After pressing Ok the contents of all documents fulfilling the filter condition are included into the container document see Figure 3-20.


Microsoft Word - A32188.doc
File Edit View Insert Format Tools Table Window Dynamic D
Normal
Times New Roman
10
B I U

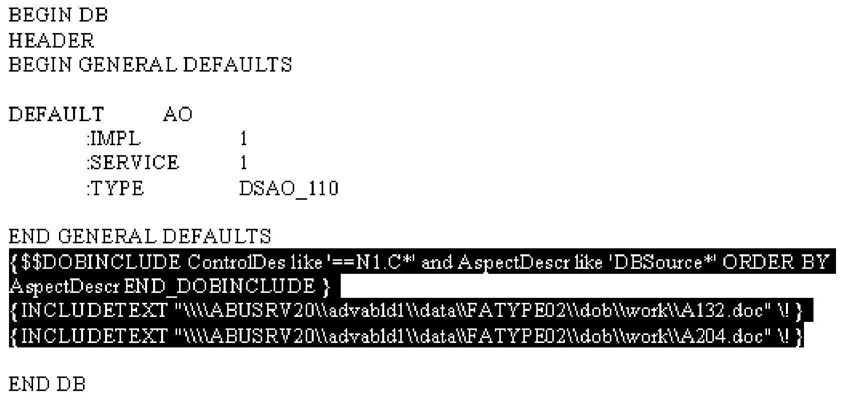
```
BEGIN GENERAL DEFAULTS

DEFAULT      AO
        :IMPL          1
        :SERVICE       1
        :TYPE          DSAO_110

END GENERAL DEFAULTS

AO1          AO
             :ADDR          64
             :IMPL          0

AO2          AO
             :ADDR          64
             :IMPL          1



END DB
```

*Figure 3-20. Container Document After Execution Document Links*

**Useful clues:**

1. When object names or reference designations are to be used in the filter, they should be brought up to date first by executing Document Builder’s **Synchronize All Documents** function (summary dialog).
2. The filter resulting in a selection of documents whose contents is included is evaluated anew
   - each time the container document is opened
   - when function Refresh Attributes/ Document Links is selected (see pull down menu Figure 3-17).
3. One of the documents whose contents have been inserted into the container document, dynamic data is modified and the modification saved (based on the example above, IMPL attribute of BoardParameter aspect of object Board1 was changed from ’0’ to ’1’ by Parameter Builder). To show such changes in the container document use the **Updated Linked Documents** menu item. Keep in mind, this function will not be executed when opening the container document (due to performance reasons) it has to be performed manually.

4. One of the documents whose contents have been inserted into container document are deleted by deleting the respective aspect or new document aspects was added (which have to fit to the filter conditions). To get the changes in the container document use the **Refresh Attributes/ Document Links** menu item. The container document will be refreshed obsolete links respectively the contents will be removed and the contents of the new links added. This function is executed automatically each time the container document is opened.
5. For each linked document, an INCLUDETEXT field is inserted constituting the file link; these inserted fields are not visible. Visible is only the data contained in the included documents. To make the links visible use **Show / Hide Field Codes** menu item see Figure 3-21.



```
BEGIN DB
HEADER
BEGIN GENERAL DEFAULTS

DEFAULT        AO
        :IMPL           1
        :SERVICE        1
        :TYPE           DSAO_110

END GENERAL DEFAULTS
{ $$DOBINCLUDE ControlDes like '==N1.C*' and AspectDescr like 'DBSource*' ORDER BY
AspectDescr END_DOBINCLUDE }
{ INCLUDETEXT "\\\\ABUSRV20\\advabld1\\data\\FATYPE02\\dob\\work\\A132.doc" \! }
{ INCLUDETEXT "\\\\ABUSRV20\\advabld1\\data\\FATYPE02\\dob\\work\\A204.doc" \! }

END DB
```

*Figure 3-21. Inserted Document Links, Show Field Codes*

### 3.5.4.5 Dynamic Data Summary

To activate in Word and in Excel useful commands select menu **Dynamic Data.** The identical items will be presented clicking the context sensitive right hand mouse button.

Word:

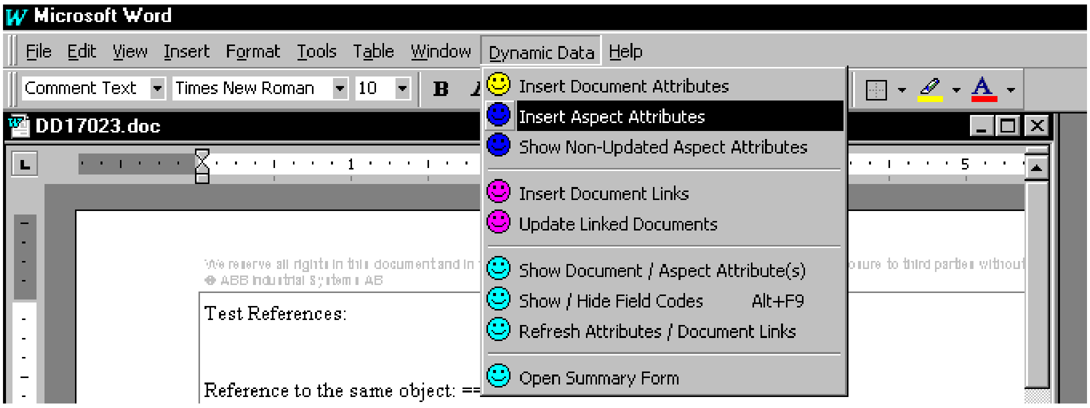

Microsoft Word
File Edit View Insert Format Tools Table Window Dynamic Data Help
Comment Text
Times New Roman
10
DD17023.doc
Insert Document Attributes
Insert Aspect Attributes
Show Non-Updated Aspect Attributes
Insert Document Links
Update Linked Documents
Show Document / Aspect Attribute(s)
Show / Hide Field Codes Alt+F9
Refresh Attributes / Document Links
Open Summary Form
Test References:
Reference to the same object: ==

*Figure 3-22. **Dynamic Data** (Word) Menu Items*

Excel:

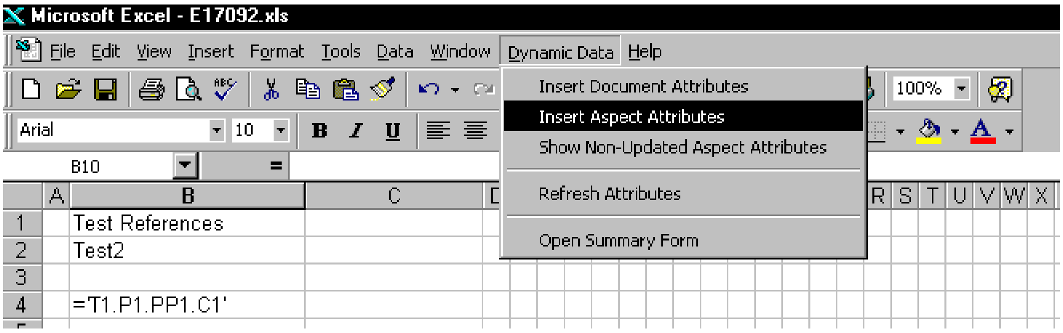

Microsoft Excel - E17092.xls
File Edit View Insert Format Tools Data Window Dynamic Data Help
Arial
10
100%
B10
Insert Document Attributes
Insert Aspect Attributes
Show Non-Updated Aspect Attributes
Refresh Attributes
Open Summary Form
Test References
Test2
=T1.P1.PP1.C1'

*Figure 3-23. **Dynamic Data** (Excel) Menu Items*

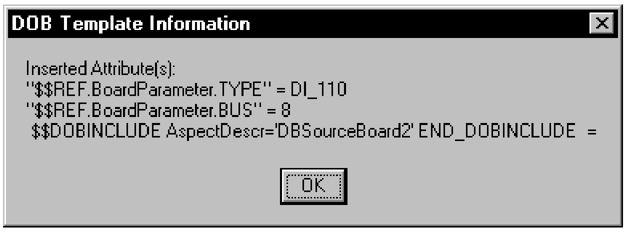
Useful commands presented in the menu items list are:

- **Insert Document Attributes:**
  For insertion document meta data like document *title*, *author*, *creation date* and so an, see Chapter 3.5.4.2 Insertion of Document Attributes into a Document
- **Insert Aspect Attributes:**
  For insertion of attributes from Parameter aspects or dedicated Structure Builder aspects
- **Show Non-Updated Aspect Attributes**:
  When opening a document containing dynamic data in the form of inserted document or aspect attributes, this data is updated automatically by retrieving values. As inserted aspect attributes might refer to aspects no longer existent, it is not possible to update their value. Select item **Show Non-Updated Aspect Attributes** to check for un-updated respectively un-retrievable references.

- **Insert Document Links (Word only)**:
  For insertion of the contents of a group of documents into a container document see Chapter 3.5.4.4 Insertion of Document Links.

- **Update Linked Documents (Word only)**:
  The function is directly connected to function I**nsert Document Links**. If the normal text contents of an included document changes, this change is also reflected in the container document when reopening it or by selecting function **Refresh Attributes / Document Links.** But if the included document itself contains **Dynamic Data** like
  - inserted **Document Attributes** or
  - inserted **Aspect Attributes** or
  - even inserted **Document Links**,
  the **Update Linked Documents function** ensures that actual values are contained in these attributes by tracking of every Document link and executing the refresh function to update the attributes and links.

- **Show Document / Aspect Attributes (Word only)**:
  When inserting a **Document** or **Aspect Attribute** in a Word document, this is done by inserting a Word *field*. Visible is only the actual value of the inserted attributes, but not the field code itself. This function offers the possibility to select more than one *field* and see the *field* codes behind the values see Figure 3-24.



```
Inserted Attribute(s):
"$$REF.BoardParameter.TYPE" = DI_110
"$$REF.BoardParameter.BUS" = 8
 $$DOBINCLUDE AspectDescr='DBSourceBoard2' END_DOBINCLUDE  =
```

*Figure 3-24. Show Document / Aspect Attributes Dialog*

- **Show / Hide Field Codes (Word only)**:
  Document- and aspect attributes. as well as Document links are inserted into document by using the *field object* available in Word. This field object is normally not visible. To show these fields select item **Show / Hide Filed Codes** and vice versa (toggle function).

- **Refresh Attributes / Document Links**:
  When opening a document aspect from Structure Builder, the document's inserted dynamic data (**Document** and **Aspect Attributes** as well as **Document Links** in Word documents) is updated automatically during the open action. This refresh action can also be executed when working with the document itself by selecting item **Refresh Attributes / Document Links.**

- **Open Summary Form**:
  The administrative attributes of a document are summarized in the Document Information form. Open the form by selecting item **Open Summary Form** see Chapter 3.6.1.1 Open the Document Information Form.

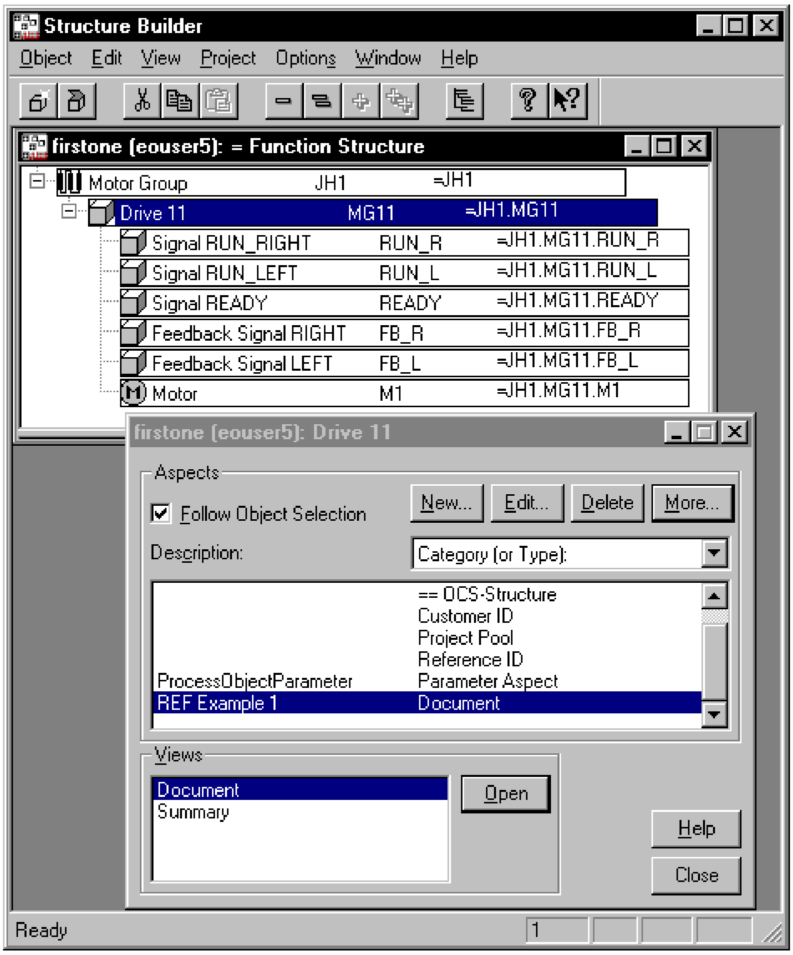
## 3.5.4.6 Example of Generic Dynamic Document

In this chapter you can see a generic dynamic document containing parameter aspect values in a library project and the same document in a working project which was derived from the library by instantiating via **Project | Import.**

Figure 3-25 below shows part of a library project called *firstone* in Structure Builder.

Note that the object *Drive11* contains a document called *REF Example 1*. In this document, aspect attributes have been inserted using the relative reference string format (see below).

As the relative format has been used, only aspect attributes of descendants of object *Drive11* can be inserted, for example attributes of an aspect belonging to object *Signal RUN_RIGHT.*


Structure Builder
Object Edit View Project Options Window Help
firstone (eouser5): = Function Structure
firstone (eouser5): Drive 11
Aspects
Follow Object Selection
New... Edit... Delete More...
Description:
Category (or Type):
Views
Open
Help
Close
Ready
1

| | | |
|---|---|---|
| Motor Group | JH1 | =JH1 |
| Drive 11 | MG11 | =JH1.MG11 |
| Signal RUN_RIGHT | RUN_R | =JH1.MG11.RUN_R |
| Signal RUN_LEFT | RUN_L | =JH1.MG11.RUN_L |
| Signal READY | READY | =JH1.MG11.READY |
| Feedback Signal RIGHT | FB_R | =JH1.MG11.FB_R |
| Feedback Signal LEFT | FB_L | =JH1.MG11.FB_L |
| Motor | M1 | =JH1.MG11.M1 |

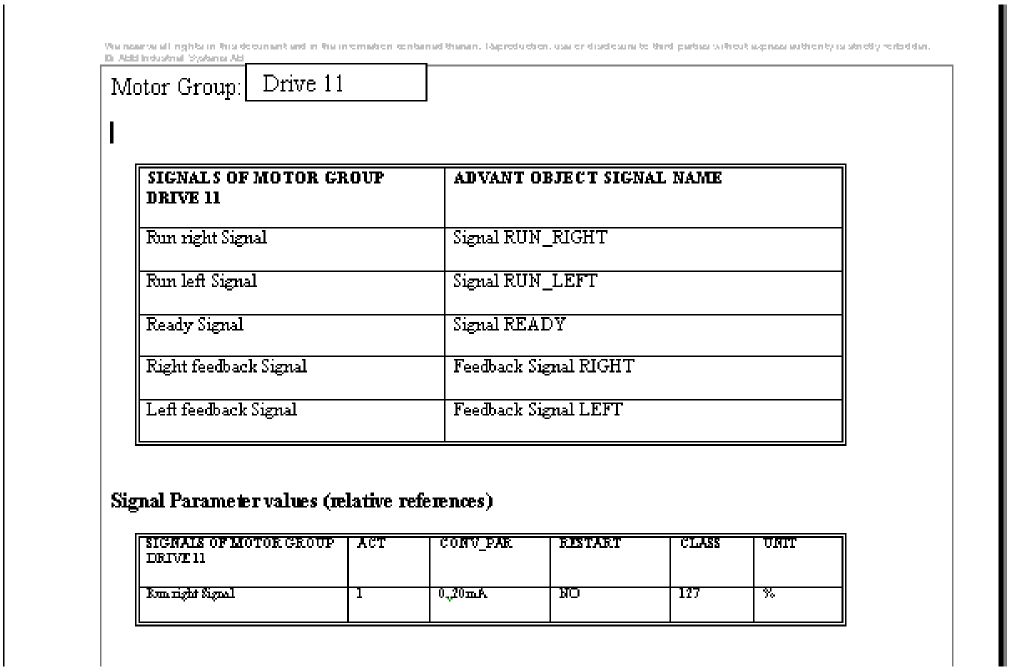
☑ Follow Object Selection

| Description: | Category (or Type): |
|---|---|
| | == OCS-Structure |
| | Customer ID |
| | Project Pool |
| | Reference ID |
| ProcessObjectParameter | Parameter Aspect |
| REF Example 1 | Document |

Views:
Document
Summary

*Figure 3-25. Library Project 'firstone' in **Structure Builder***

In document *REF Example 1* of Figure 3-26, belonging to object *Drive11*, relative aspect attributes have been inserted and updated with their actual values:



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Motor Group: Drive 11

| **SIGNALS OF MOTOR GROUP DRIVE 11** | **ADVANT OBJECT SIGNAL NAME** |
|---|---|
| Run right Signal | Signal RUN_RIGHT |
| Run left Signal | Signal RUN_LEFT |
| Ready Signal | Signal READY |
| Right feedback Signal | Feedback Signal RIGHT |
| Left feedback Signal | Feedback Signal LEFT |

**Signal Parameter values (relative references)**

| SIGNALS OF MOTOR GROUP DRIVE 11 | ACT | CONV_PAR | RESTART | CLASS | UNIT |
|---|---|---|---|---|---|
| Run right Signal | 1 | 0..20mA | NO | 127 | % |

*Figure 3-26. Document REF Example1 of Object Drive11, Containing References*

The name of the motor group (*Drive11*) as well as the names of the signals ((*Signal RUN_RIGHT*, *Signal RUN_LEFT,...*) and the attribute values in the table below (*ACT, CONV_PAR*,...) are inserted parameter aspect attributes.

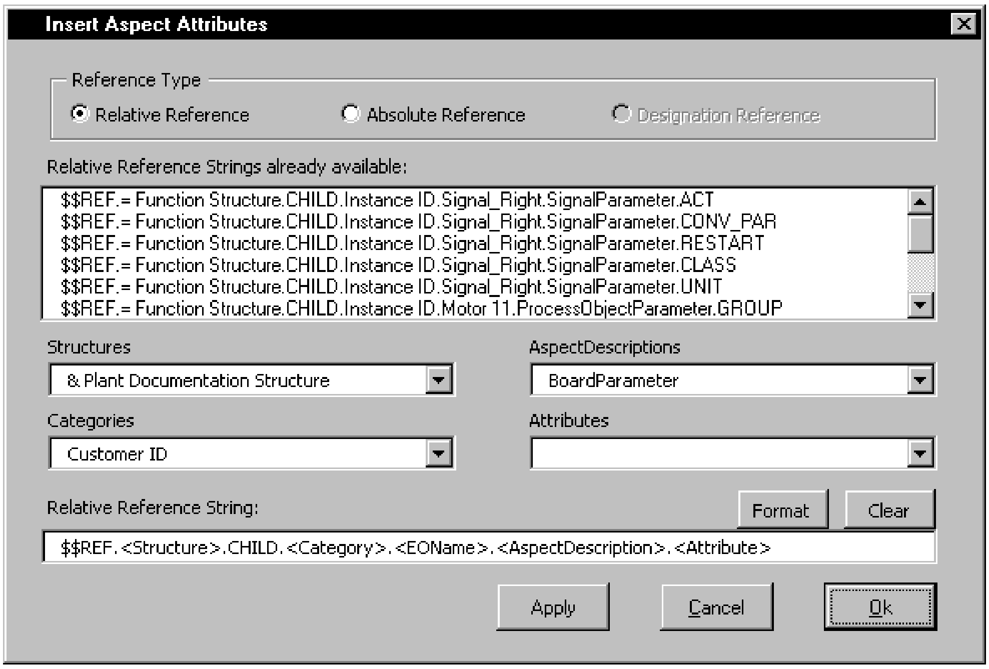
In the **Relative Reference Strings Already Available** list of the Insert **Aspect Attributes** dialog for this document, you can see the reference strings used in the document (Figure 3-27),

for example the string

*$$REF.= Function Structure.CHILD.Instance ID.Signal_Right.SignalParameter.CONV_PAR*

which resolves to the actual value *0..20mA* in the document table.

Note that, as we are in a generic dynamic document in a library project, category **Instance ID** has been used to name the objects! Whereas the object has the name *Signal RUN_RIGHT i*n above picture of the Structure Builder (this is the **Customer ID.**Name displayed), it is referenced using the name attribute value *Signal_Right* of the **Instance ID**.



Reference Type

● Relative Reference ○ Absolute Reference ○ Designation Reference

Relative Reference Strings already available:

```
$$REF.= Function Structure.CHILD.Instance ID.Signal_Right.SignalParameter.ACT
$$REF.= Function Structure.CHILD.Instance ID.Signal_Right.SignalParameter.CONV_PAR
$$REF.= Function Structure.CHILD.Instance ID.Signal_Right.SignalParameter.RESTART
$$REF.= Function Structure.CHILD.Instance ID.Signal_Right.SignalParameter.CLASS
$$REF.= Function Structure.CHILD.Instance ID.Signal_Right.SignalParameter.UNIT
$$REF.= Function Structure.CHILD.Instance ID.Motor 11.ProcessObjectParameter.GROUP
```

Structures: & Plant Documentation Structure

AspectDescriptions: BoardParameter

Categories: Customer ID

Attributes:

Relative Reference String: $$REF.<Structure>.CHILD.<Category>.<EOName>.<AspectDescription>.<Attribute>

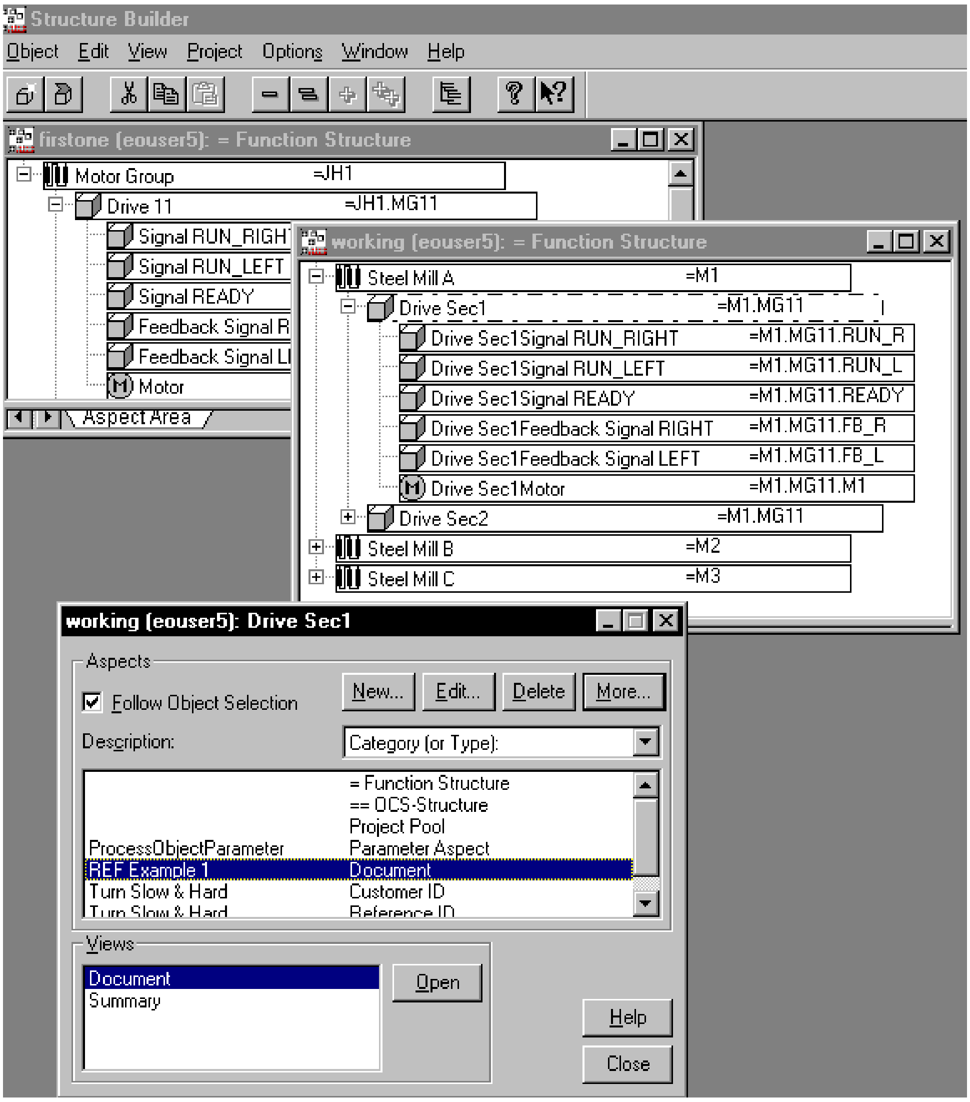
*Figure 3-27. Reference Strings Used in the Document*

In Figure 3-28, you can see the library project *firstone* in the background and the derived working project *working* in the foreground.

The name of the top object has been changed from *MotorGroup* to *Steel Mill A*, *Drive1*1 has become *Drive Sec1* and *Signal RUN_RIGHT* is now *Drive Sec1 Signal RUN_RIGHT.* Remember, these are the **Customer ID**.Name attributes which are different, whereas the I**nstance ID**.Name attribute values are still the same.

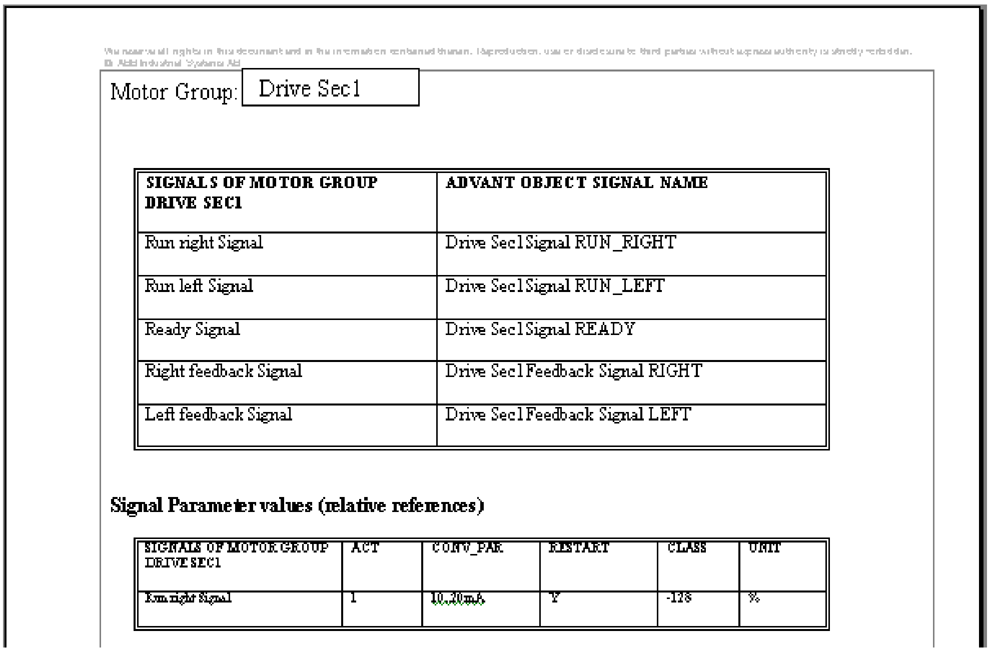
Figure 3-29 shows the document now belonging to Drive Sec1.

Note that the name of the motor group (now *Drive Sec1*), the names of the signals (now *Drive Sec1 Signal RUN_RIGHT,...*) and the values for *ACT, CONV_PAR,...* have correct values pertaining to the working project.


Structure Builder
Object Edit View Project Options Window Help
firstone (eouser5): = Function Structure
Motor Group =JH1
Drive 11 =JH1.MG11
Signal RUN_RIGHT
Signal RUN_LEFT
Signal READY
Feedback Signal R
Feedback Signal LI
Motor
Aspect Area
working (eouser5): = Function Structure
Steel Mill A =M1
Drive Sec1 =M1.MG11
Drive Sec1Signal RUN_RIGHT =M1.MG11.RUN_R
Drive Sec1Signal RUN_LEFT =M1.MG11.RUN_L
Drive Sec1Signal READY =M1.MG11.READY
Drive Sec1Feedback Signal RIGHT =M1.MG11.FB_R
Drive Sec1Feedback Signal LEFT =M1.MG11.FB_L
Drive Sec1Motor =M1.MG11.M1
Drive Sec2 =M1.MG11
Steel Mill B =M2
Steel Mill C =M3
working (eouser5): Drive Sec1
Aspects
☑ Follow Object Selection
New... Edit... Delete More...
Description:
Category (or Type):
Views
Document
Summary
Open
Help
Close

| Description | Category (or Type) |
|---|---|
| | = Function Structure |
| | == OCS-Structure |
| | Project Pool |
| ProcessObjectParameter | Parameter Aspect |
| REF Example 1 | Document |
| Turn Slow & Hard | Customer ID |
| Turn Slow & Hard | Reference ID |

*Figure 3-28. Working Project, Working in Structure Builder*



Motor Group: Drive Sec1

| SIGNALS OF MOTOR GROUP DRIVE SEC1 | ADVANT OBJECT SIGNAL NAME |
|---|---|
| Run right Signal | Drive Sec1 Signal RUN_RIGHT |
| Run left Signal | Drive Sec1 Signal RUN_LEFT |
| Ready Signal | Drive Sec1 Signal READY |
| Right feedback Signal | Drive Sec1 Feedback Signal RIGHT |
| Left feedback Signal | Drive Sec1 Feedback Signal LEFT |

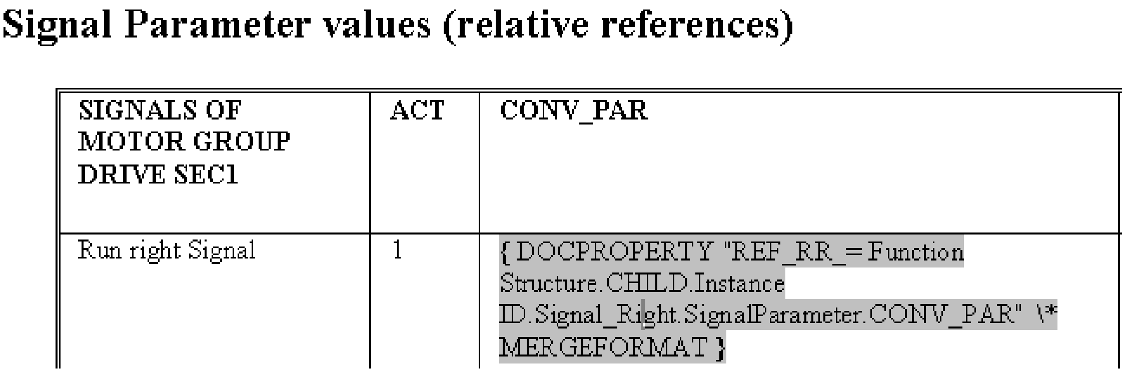
**Signal Parameter values (relative references)**

| SIGNALS OF MOTOR GROUP DRIVE SEC1 | ACT | CONV_PAR | RESTART | CLASS | UNIT |
|---|---|---|---|---|---|
| Run right Signal | 1 | 10..20mA | Y | -128 | % |

*Figure 3-29. Document REF Example1 of Object Drive Sec1, Containing References*

And here is a little trick to see what references exactly are behind a value:

As aspect attributes are inserted into a document vial so-call document properties, you can see the reference string behind such a value if you select the value and press **Toggle Field Codes** from the right hand mouse button menu in Word. The result looks something like in Figure 3-30 - the reference string is almost completely contained in the document property.

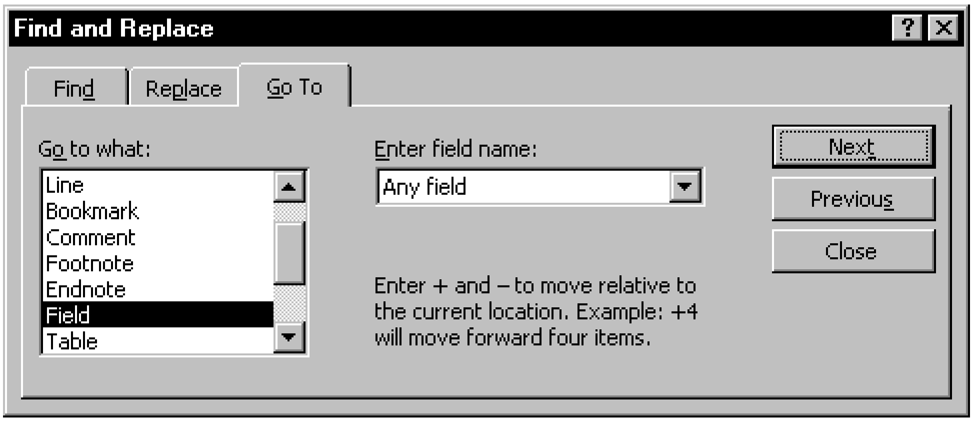


**Signal Parameter values (relative references)**

| SIGNALS OF MOTOR GROUP DRIVE SEC1 | ACT | CONV_PAR |
|---|---|---|
| Run right Signal | 1 | { DOCPROPERTY "REF_RR_=Function Structure.CHILD.Instance ID.Signal_Right.SignalParameter.CONV_PAR" * MERGEFORMAT } |

*Figure 3-30. Toggle Field Code Result*

If you want to go through all inserted aspect attributes of a document, select Word menu item **Edit | Find**, tab **Go To** and select **Field** as shown below.



Go to what: Field

Enter field name: Any field

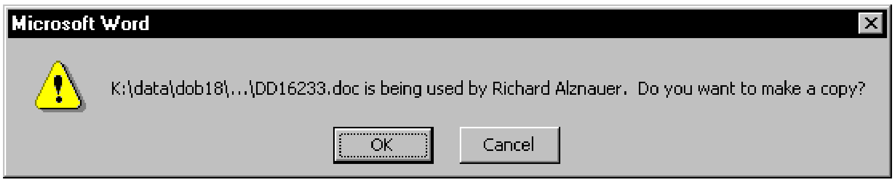
Enter + and – to move relative to the current location. Example: +4 will move forward four items.

*Figure 3-31. Toggle Field Code Result*

## 3.5.5 Document Locking

When a file is opened for editing or printing, it is locked by the user performing the command. This means, another user trying to open or print the same file will get a hint. Depending on the tool in use, the hint looks different:

**MS Word**

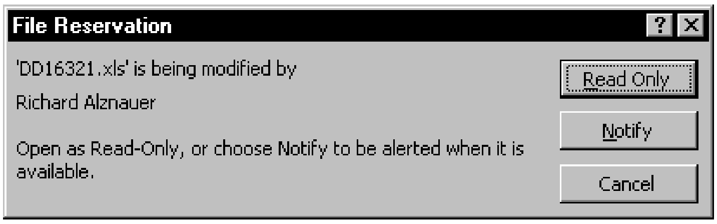


K:\data\dob18\...\DD16233.doc is being used by Richard Alznauer. Do you want to make a copy?

*Figure 3-32. MS Word File Locking*

In case of MS Word, the user may create a temporary copy of the document in order to read it. If you try to save the file you can only save it using a different name

**MS Excel**



'DD16321.xls' is being modified by
Richard Alznauer

Open as Read-Only, or choose Notify to be alerted when it is available.

*Figure 3-33. MS Excel File Locking*

In case of MS Excel, the file can only be opened in read-only mode. You may also select **Notify** which results in an event (message box) when the document is closed.

## 3.5.6 How to Handle Free Aspects Within the Structure Builder

### 3.5.6.1 What Is the Free Aspect?

The **Free** aspect is able to start third party applications while providing context sensitive parameter values to the application. The types of applications that can be started are for example:

- Maintenance system
- Third party engineering system
- Document management system.

The **Document Builder** offers two powerful possibilities to integrate external applications:

1. By use of document aspects based on templates which can be handled by third party applications installed on the PC. How to configure the **Document Builder** in order to integrate a third party application simply by associating the file extension of a respective template with the required application is described in Section 3.6.2.1, How to Associate a Template with an Application.
2. By use of **Free** aspects which allow the user to start any application installed on the PC.

The major differences between both possibilities are:

- The **Free** aspect allows to pass context sensitive parameters to the third party applications.
- Third party applications integrated by use of the **Free** aspect are not limited to applications handling files as for example Microsoft Project or Notepad are.
- The integration of third party applications using the **Free** aspect implies preparation of a batch file (*.BAT, *.CMD) or development activity using for example Visual Basic.

### 3.5.6.2 Parameters of the Free Aspect

Parameters of a Free aspect are stored in a so-called parameter file maintained by the **Document Builder** for each **Free** aspect**.** This parameter file can be opened and edited by selecting the command **Edit Parameter** for this Free aspect (see Section 3.5.6.8, More | Parameter: Edit Free Aspect Parameters).

When the application to be executed is activated, the parameter file is passed as one call parameter to the application.

The structure of the file follows an "INI" file. The parameters are divided into two sections:

1. Section **[user]**

   Within this section the user can define any parameters depending on the third party application to be integrated. Parameters can be deleted by removing the related line. A parameter is added by adding a line like

   ```
   MyParameter = value
   ```

   There is one mandatory parameter which must not be removed:

   ```
   Free_Script_File = path\application
   ```

   where *path* and *application* represent the location and the name of the application to be started when the **Open** command is performed.

   This application is to be prepared or developed by the user and acts as a kind of a "gateway" between the **Document Builder** and the actual third party application to be integrated.

   There is an example of a "gateway" program provided which will be executed when executing a **Free** aspect without first modifying this parameter. This example shows how to access the parameter file and it can be used as a starting point to develop an own "gateway". The entry for this program looks like this:

   ```
   Free_Script_File=\\GITAS043\abtool1\DOB\32r0\Free\appl.exe
   ```

   The functionality of the "gateway" depends on the user's demands and on the requirements imposed by the third party application to be integrated.

2. Section **[system]**

   This section is added or overwritten if already existing by the **Document Builder.**
   It contains the following parameters:

   - ObjectName: the Customer Identity of the object the **Free** aspect belongs to
   - AspectDescription: the aspect description of the **Free** aspect
   - FuncDes: the absolute reference designation in = Function Structure of the object the Free aspect belongs too
   - LocDes: the absolute reference designation in ++ Location Structure of the object the Free aspect belongs too
   - MountDes: the absolute reference designation in + Mounting Structure of the object the Free aspect belongs too
   - ControlDes: the absolute reference designation in == OCS-Structure of the object the Free aspect belongs too
   - ProjShortName: the short name of the project the **Free** aspect belongs to
   - ProjPath: the project's root path
   - WorkPath: the project's working directory for **Document Builder**
   - FileName: the name of the application executed.

### 3.5.6.3 Commands Defined for the Free Aspect

The following actions can be performed on a **Free** aspect:

- **Add** a new Free aspect
- **Delete** a Free aspect
- **Open | Execute**
- **More | Open**
- **More | Edit Parameter**.

In the following sections these actions are described in more detail.

### 3.5.6.4 Add a New Free Aspect

1. Press the **New** button in the *Object* window - this will pop-up the **New Aspect** dialog.
2. Select the aspect type **FreeAspect,** edit the AspectDescription if required and press **OK.** The new aspect is now visible in the *Object* window.

### 3.5.6.5 Delete a Free Aspect

Select the Free aspect to be deleted in the *Object* window and press **Delete**.
The Free aspect is not visible anymore in the *Object* window.

### 3.5.6.6 Open | Execute: Execute the Application

1. Select a **Free** aspect in the Structure Builder's *Object* window.
2. Press the **Open** button with the view **Execute** selected.

The application noted in the parameter file, entry *Free_Script_File*, is started (in the example Free aspect, this is a dummy application located under *abtool1*\dob\31ro\free\appl.exe, further on, an example for a batch file aaa.bat). Batch offers the possibility to pass in values for processing inside the batch file. The values of all the keys below the section '[system]' will be retrieved at **Execution** and might be used as parameter for batch files.

Free_Script_File=\\GITAS043\abtool1\DOB\32r0\Free\aaa.bat<ProjShortName><ProjPath>…

Pick up the values inside the batch file by managing the %1, %2 till %9 'bat' variables.

### 3.5.6.7 More | Open: Execute the Application

1. Select a **Free** aspect in the Structure Builder's *Object* window.
2. Press the **More** button, select **Open**.

Choosing this command results in the same action as choosing **Open | Execute**.

### 3.5.6.8 More | Parameter: Edit Free Aspect Parameters

1. Select a **Free** aspect in the Structure Builder's *Object* window.
2. Press the **More** button and select **Edit Parameter** from the pop-up menu.

NotePad is started to enable the user to edit the parameter file belonging to this Free aspect.

# 3.6 Application Procedures

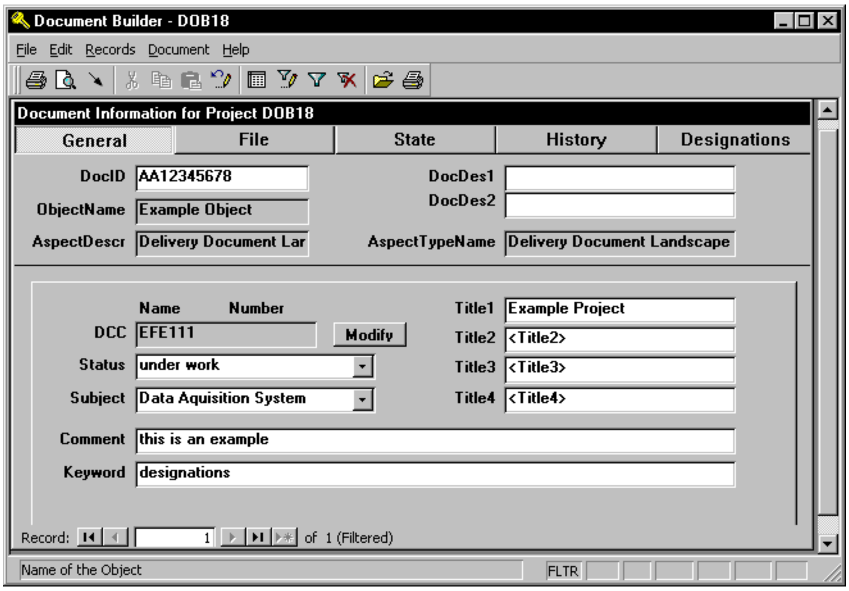
## 3.6.1 Document Information Form

**What is the Document Information Form?**

All administrative attributes of a document (e.g. document identity or titles) are summarized in the **Document Information**. The **Document Information** is maintained by the **Document Builder** and stored in an MS Access database. To display this data, please open the **Document Information Form** (see next chapter)**.**

### 3.6.1.1 Open the Document Information Form

Select a document aspect in the Structure Builder's *Object* window. Open the document using the view **Summary**. The document information displayed depends on the selection in the Structure Builder, i.e. if you select another document aspect, the contents in the document information form follows the selection in the Structure Builder.



Document Information for Project DOB18

DocID: AA12345678
ObjectName: Example Object
AspectDescr: Delivery Document Lar
DocDes1:
DocDes2:
AspectTypeName: Delivery Document Landscape
DCC (Name, Number): EFE111
Status: under work
Subject: Data Aquisition System
Title1: Example Project
Title2: <Title2>
Title3: <Title3>
Title4: <Title4>
Comment: this is an example
Keyword: designations
Record: 1 of 1 (Filtered)
Name of the Object

*Figure 3-34. **Document Information** Formsheet View*

The information presented is grouped into five sections or so-called tab-pages:

1. **General**
   General information about the document, e.g. titles, status, comment. The identification of the document (e.g. document identity, object name, aspect description) is repeated on all tab-pages.

2. **File**
   Information about the file related to the document and the template the document is based on.
3. **State**
   Status of the document and responsibilities (e.g. author, creation date, approving person, etc.).
4. **History**
   Overview over the different versions of a document. This tab-page is not yet supported as version handling is not yet supported.
5. **Designations**
   Various designations of the document like functional designation, location designation, etc.

Please note that bracketed values in fields are only meant as placeholders and can be overwritten by a more meaningful value, e.g. <Title2> should be replaced with another text representing the title 2 for this document.

For a detailed list of attributes shown on the various pages and their layout please refer to Section A.1, Administrative Document Attributes and Section A.2, Document Information Pages.

### 3.6.1.2 Navigate in the Document Information Form

There are two presentation views for the data:

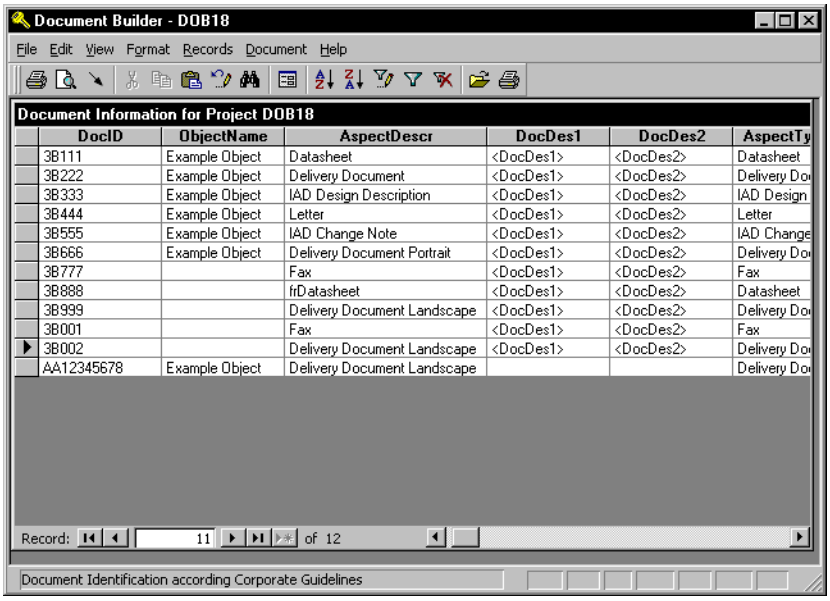
1. Formsheet and
2. Datasheet.

**Formsheet**

When opening the **Document Information** form, the formsheet (see Figure 3-34) is presented as the default view. Within the formsheet you can navigate to the tab-pages by pressing the related tab-button.

**Datasheet**

The datasheet is a tabular presentation of all attributes of a document. Each line represents a document (see Figure 3-35).



Document Information for Project DOB18

| DocID | ObjectName | AspectDescr | DocDes1 | DocDes2 | AspectTy |
|---|---|---|---|---|---|
| 3B111 | Example Object | Datasheet | <DocDes1> | <DocDes2> | Datasheet |
| 3B222 | Example Object | Delivery Document | <DocDes1> | <DocDes2> | Delivery Do |
| 3B333 | Example Object | IAD Design Description | <DocDes1> | <DocDes2> | IAD Design |
| 3B444 | Example Object | Letter | <DocDes1> | <DocDes2> | Letter |
| 3B555 | Example Object | IAD Change Note | <DocDes1> | <DocDes2> | IAD Change |
| 3B666 | Example Object | Delivery Document Portrait | <DocDes1> | <DocDes2> | Delivery Do |
| 3B777 | | Fax | <DocDes1> | <DocDes2> | Fax |
| 3B888 | | frDatasheet | <DocDes1> | <DocDes2> | Datasheet |
| 3B999 | | Delivery Document Landscape | <DocDes1> | <DocDes2> | Delivery Do |
| 3B001 | | Fax | <DocDes1> | <DocDes2> | Fax |
| 3B002 | | Delivery Document Landscape | <DocDes1> | <DocDes2> | Delivery Do |
| AA12345678 | Example Object | Delivery Document Landscape | | | Delivery Do |

Document Identification according Corporate Guidelines

*Figure 3-35. **Document Information** Datasheet View*

The datasheet can be opened from the form view in different ways:

- Choosing menu item **View | Datasheet** changes to datasheet
- Pressing the **Datasheet** toolbar button also changes to the datasheet
- Pressing one of the toolbars **Apply Filter** or **Remove Filter** has the same effect.

To switch back to the formsheet, press the **Formsheet** button in the toolbar or choose the menu item **View | Formsheet**.

The number of documents presented in the datasheet depends on the current filter setting (see below). If no filter is defined, all project documents are displayed.

Within the datasheet, you can scroll through all attributes and all documents (if several documents are filtered) by using the horizontal and vertical scroll bars. You can also reformat the layout of the datasheet in terms of:

- Hide and re-display attributes (columns)
- Freeze and un-freeze one or several attributes
  This allows you to scroll horizontally through all attributes without moving the frozen attributes out of the window.
- Set the column width and height, the font or the grid used.

These functions can be selected from the **Format** menu.

### 3.6.1.3 Search for Documents

Besides the possibilities provided in the **Structure Builder**, the **Document Builder** allows you to search for documents according to user definable filter criteria in the **Document Information** form. The following steps have to be performed:

1. First open the **Document Information** Form using any document (see Chapter 3.6.1.1 Open the Document Information Form)
2. Select menu item the **Edit Filter/Sort** from the **Records** menu - you are offered the choice between 3 different kinds of filters:
    a. Filter By Form
    b. Filter By Selection
    c. Advanced Filter / Sort.

These are the standard Access types of filters and are explained here only in compressed form. For further details please refer to the Access user manual or online help. Note that all three filters can be used in datasheet view as well.

**a) Filter By Form**

Selecting this filter allows you to enter your search criteria directly in the form with the help of pick lists (Figure 3-36 shows the use of this filter type in form view, but it also works in datasheet view).

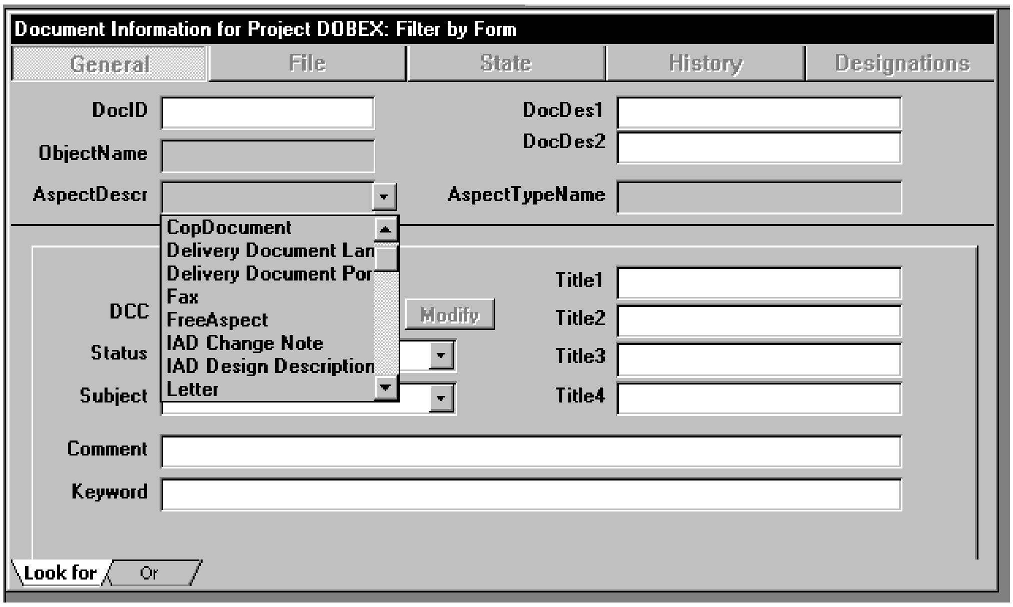


*Figure 3-36.* ***Document Information*** *Filter by Form*

Suppose you want to search for a document and you know only the aspect description of this document instance (e.g. *Fax*), you would

- select **Records | Edit Filter / Sort | Filter By Form**
- click on field **AspectDescr** and select *Fax* from the pick list, then
- select **Apply Filter** from the menu or toolbar

and the datasheet view for all documents named *Fax* is shown.

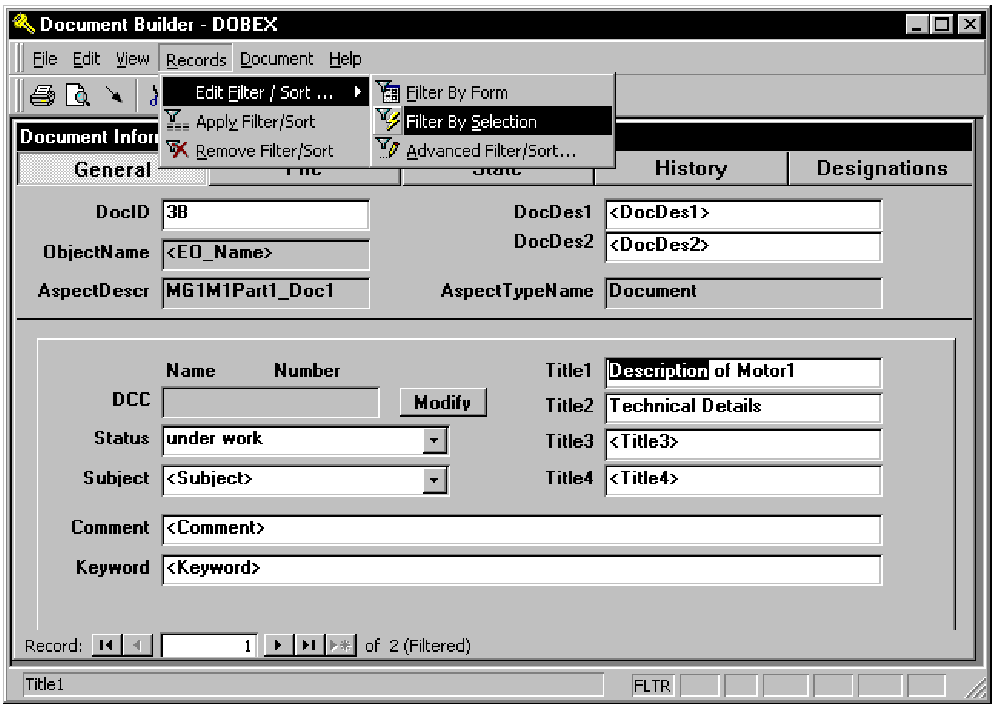
Note that you can combine filter criteria for more than one field.

### b) Filter By Selection

This filter type allows you to search for parts of strings too. Below you see an example where all documents are to be retrieved where *Title1* starts with “Description”.

- First the string or substring has to be selected, then
- select **Records | Edit Filter / Sort | Filter By Selection.**

The filter is applied, but we remain in formsheet view.

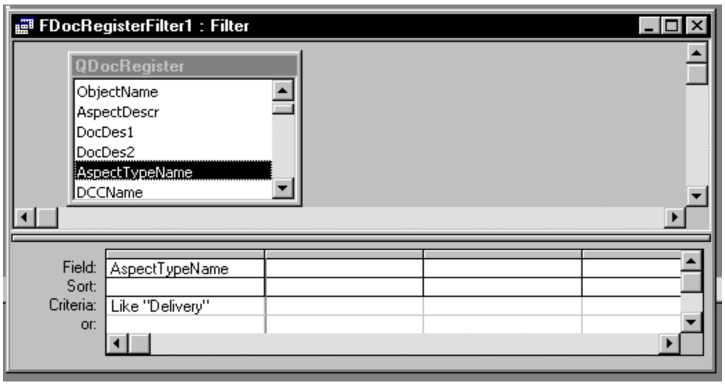


DocID: 3B
ObjectName: <EO_Name>
AspectDescr: MG1M1Part1_Doc1
DocDes1: <DocDes1>
DocDes2: <DocDes2>
AspectTypeName: Document
DCC:
Status: under work
Subject: <Subject>
Title1: Description of Motor1
Title2: Technical Details
Title3: <Title3>
Title4: <Title4>
Comment: <Comment>
Keyword: <Keyword>
Record: 1 of 2 (Filtered)
Title1
FLTR

*Figure 3-37.* ***Document Information*** *Filter by Selection*

**c) Advanced Filter / Sort**

- Select **Records | Edit Filter / Sort | Advanced Filter / Sort** and the following dialog pops up:



Field: AspectTypeName
Sort:
Criteria: Like "Delivery"
or:

*Figure 3-38.* ***Document Information*** *Advanced Filter*

- Select the administrative attribute (field) from the selection box you would like to define a search criteria for, e.g. “AspectTypeName”.
- Enter the criteria for this field
(you may also specify wildcards (*) in the criteria string or several values which are connected by a logical “OR”).

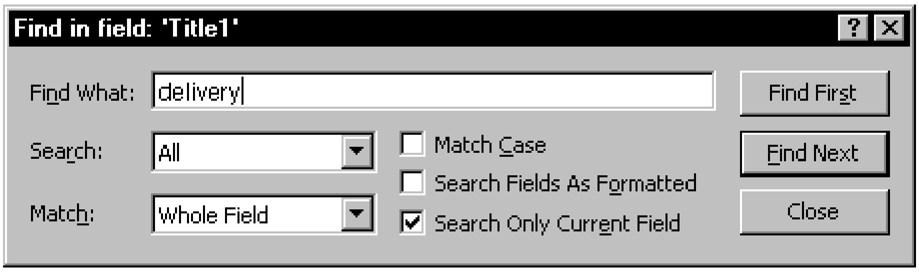
  Example: `like “Delivery *”`

  Example: `= 111 OR = 222`
- You can include all administrative attributes in your filter specification;
each field specified will be added by a logical “AND” Operation to the whole filter specification.

When you have completed the filter specification, you can apply the filter by pressing the **Apply Filter** button in the toolbar. This results in displaying the datasheet view showing all documents fulfilling the filter specification.
If you want to redefine the filter (if for example the hit rate is too high), just perform the procedure again and adapt your filter criteria.

You can also specify more complex sort criteria, e.g. sort by **Title1** and within **Title1** sort by **Document Identities**. This can be entered within the **Edit Filter** dialog by selecting **Ascending** or **Descending** within the row titled Sort.

Besides the procedure described above, it is also possible to search for certain documents in datasheet view by specifying a find criteria in the following dialog. The dialog is opened by selecting the menu **Find** from the **Edit** menu or by pressing the **Find** button in the toolbar.



Find in field: 'Title1'

Find What: delivery

Search: All

Match: Whole Field

☐ Match Case

☐ Search Fields As Formatted

☑ Search Only Current Field

*Figure 3-39.* ***Find*** *Dialog*

- – **Find What**: text string to be found.
- – **Search**: Up, Down or All can be chosen.
- – **Match**: Whole Field, Any Part of Field or First Part of Field can be chosen.
- – **Match Case**: distinguish capital and lower characters.
- – **Search Fields as Formatted**: search for formatted text (typically date formats). For more information please refer to the user manual of MS Access.
- – **Search Only Current Field**: search in the current attribute of all documents depicted in the datasheet or in all attributes. The current attribute (field) is the one the cursor is located in and is visible in the window title of the **Find** dialog (in above example: **Title1**).

Once applied, the filter might result in the display of one or several documents. In order to open a document, just select it by placing the cursor in the corresponding row and press the **Open Document** button in the toolbar or select **Open** from the **Document** menu.

**Remove Filter**
If you want to see all documents, press the **Remove Filter** button in the toolbar or select **Remove Filter** from the **Records** menu. This also works in both formview and datasheet view.

### 3.6.1.4 Modify Document Attributes

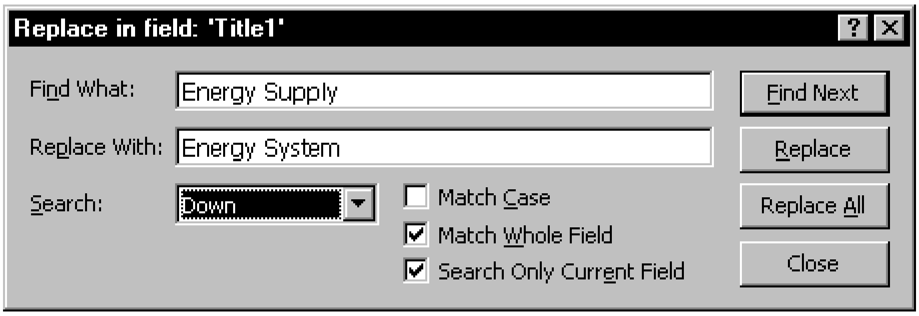
All administrative attributes can be modified except:

- Object name
- Aspect description
- Aspect type name
- Name and directory of document and template
- Reference designations.

Non-modifiable attributes are grey fields, modifiable attributes are white fields in the **Document Information** form.

Modifications can be performed in both views (formsheet and datasheet).

If one or more attributes of *several* document have to be modified, there is a replace function as depicted in the following figure. The dialog is entered by selecting **Replace** from the **Edit** menu in datasheet view.



Replace in field: 'Title1'

Find What: Energy Supply

Replace With: Energy System

Search: Down

☐ Match Case

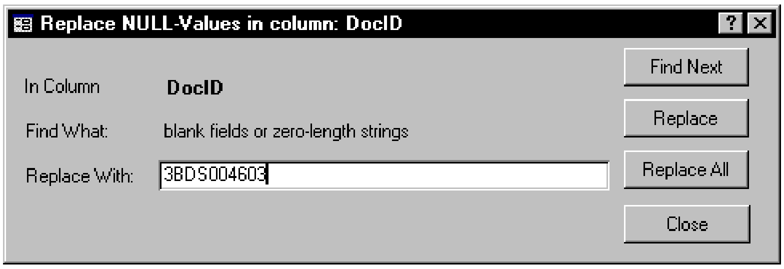
☑ Match Whole Field

☑ Search Only Current Field

*Figure 3-40.* ***Replace*** *Dialog*

- **Find What**: text string to be found (example: “Energy Supply”).
- **Replace With**: text to replace the old text (example: “Energy System”).
- **Search**: Up, Down or All can be chosen.
- **Match Case**: distinguish capital and lower characters.
- **Match Whole Field**: if the text to be replaced is only a substring in the related field, do not select this criteria.
- **Search Fields as Formatted**: search for formatted text (typically date formats). For more information please refer to the user manual of MS Access.
- **Search Only Current Field**: search in the current attribute of all documents depicted in the datasheet or in all attributes. The current attribute (field) is the one the cursor is located in and is visible in the window title of the **Find** dialog (in above example: **Title1**).

To replace NULL values of a certain field use the Replace NULL Values dialog. The menu item is presented if the datasheet form is activated. To open dialog select menu entry **Replace NULL-Values** from the **Edit** menu.



In Column: **DocID**

Find What: blank fields or zero-length strings

Replace With: 3BDS004603

*Figure 3-41. Replace NULL-Values*

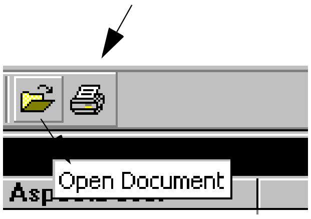
For example if you want to replace the NULL values of field “DocID” please follow the steps:

1. **Replace With: f**ill in the text to replace the NULL values.
2. Use **Find Next/ Replace** button to replace selectively.

Use **Replace All** to replace the values in one step.

### 3.6.1.5 Open or Print Documents

A document presented in the **Document Information** form can be opened or printed by either selecting the menu entry **Open** or **Print** from the **Document** menu or by pressing the **Open Document** / **Print Document** button in the toolbar:



Print Document

*Figure 3-42. Documents Toolbar Buttons*

If you have filtered several document listed in the datasheet view, you can select a document by placing the cursor in the related row and open or print the document in the same way as described above.

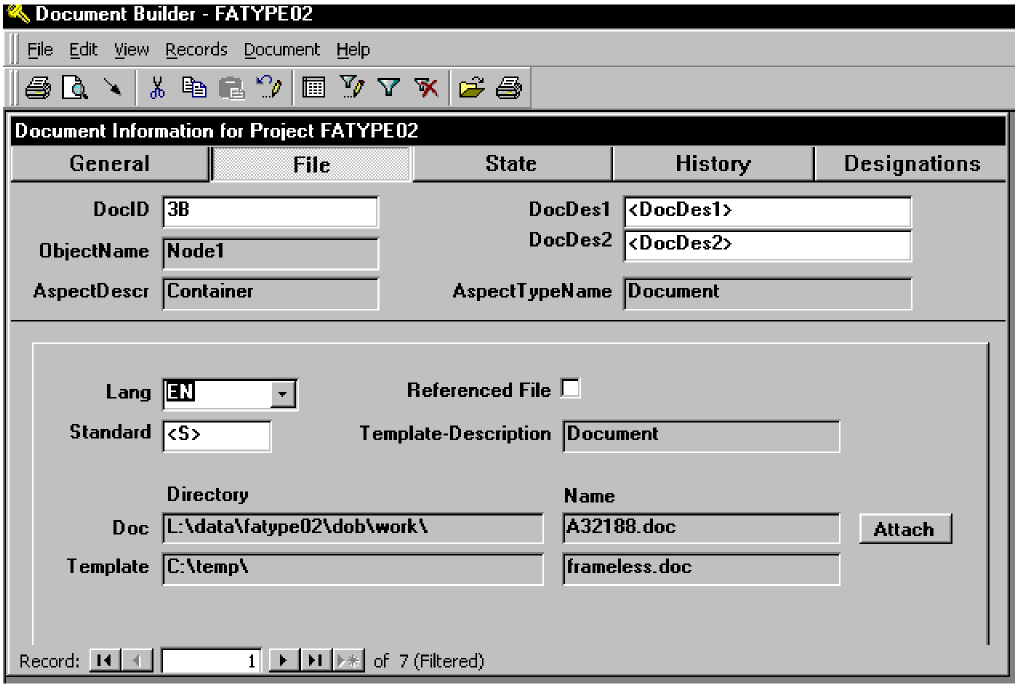
### 3.6.1.6 Attach Another File to an Existing Document

Sometimes, it might be necessary to replace the existing file with another file, e.g. when you receive files from a customer.

To import *a large number* of documents, use the **Structure Builder's Import** function to create new document aspects and at the same time import a large number of document files (for more information please refer to **Structure Builder** User's Guide and **Parameter Builder** User's Guide).

In the **Document Builder**, a *single* customer file can be attached to an already existing document aspect following these steps:

1. Open the document in **Summary** view in the Structure Builder, resulting in the display of the **Document Information** form.
2. Navigate to the **File** page of the **Document Information** form.


Document Builder - FATYPE02
File Edit View Records Document Help
Document Information for Project FATYPE02
General
File
State
History
Designations
Attach

DocID: 3B
ObjectName: Node1
AspectDescr: Container
DocDes1: <DocDes1>
DocDes2: <DocDes2>
AspectTypeName: Document
Lang: EN
Referenced File: ☐
Standard: <S>
Template-Description: Document

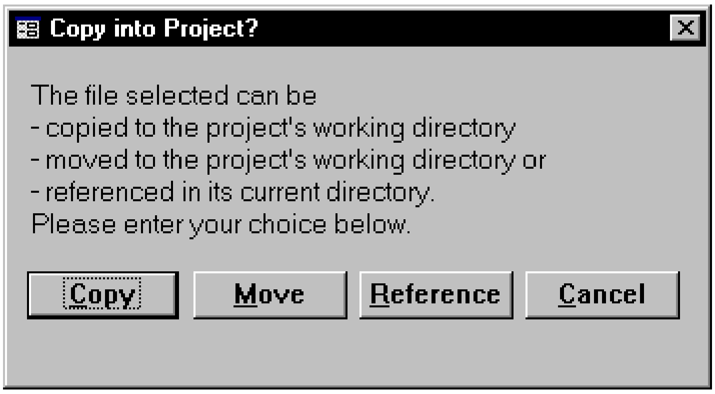
| | Directory | Name |
|---|---|---|
| Doc | L:\data\fatype02\dob\work\ | A32188.doc |
| Template | C:\temp\ | frameless.doc |

Record: 1 of 7 (Filtered)

*Figure 3-43. File Page of **Document Information** Form*

3. Press the **Attach** button (see Figure 3-43).
   This results in opening a file selection dialog in which you can select the file to be attached.

4. If you have selected a file outside the current project's range (i.e. not in the project's working directory *advabld1*\**data**\*project*\**dob\\work**), you are asked whether the file to be attached should be
   - *referenced* only or
   - *copied* physically into the project environment or even
   - *moved* to the project environment.



The file selected can be
- copied to the project's working directory
- moved to the project's working directory or
- referenced in its current directory.
Please enter your choice below.

*Figure 3-44.* ***Copy into Project*** *Dialog*

**WARNING**

**Please be careful with the Move option in this dialog.**

Use it only to move files from an arbitrary directory into the project's working directory but never to move files from another project into this project. After the move operation, the original file does not exist anymore and if the file to be attached by moving it belongs to another project, opening the document aspect to which this file originally belonged will result in an error.

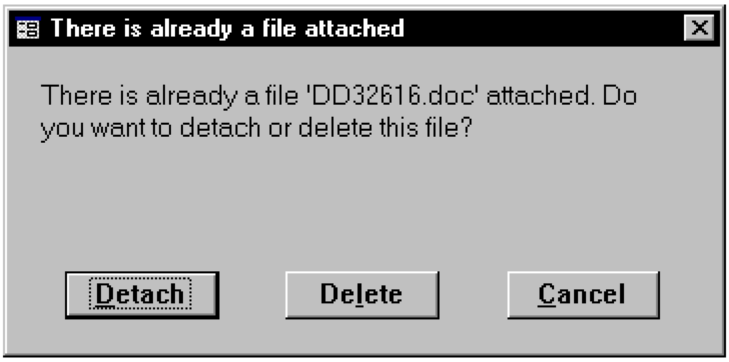
**NOTE**

If you attach a file from outside the scope of the project by *reference* only (e.g. refer to your local PC disk), update of any inserted dynamic data cannot be performed when opening /printing the file. Moreover, other users might not have access to the file.

For these reasons, it is advisable to always *copy* files into the project directory. Also, when a non-dynamic file is copied, it is made dynamic automatically (for a detailed description of dynamic documents please refer to Chapter 3.5.4 How to Handle Dynamic Data in Documents).

Note that *referenced* files are marked on the **File** page of the **Document Information** form in check box **Referenced File**.

5. In the next step you are asked whether the original file should be detached or deleted (Figure 3-45).



There is already a file attached

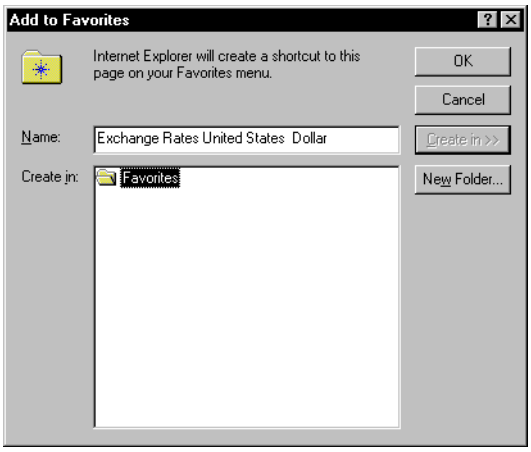
There is already a file 'DD32616.doc' attached. Do you want to detach or delete this file?

*Figure 3-45.* ***Detach/Delete Existing File*** *Dialog*

6. If you press the **Delete** button, the original file will be deleted after confirmation. If **Detach** was chosen, you are asked in a file selection dialog box where to save the original file.

**Example: How to Attach a Favorite Internet Address**

- Open the address you want to attach to a document aspect in **Internet Explorer**.
- From the **Favorites** icon select item **Add To Favorites**.
- Press the **Create in** button and choose a name and location for the resulting URL shortcut, finish by pressing **OK** (see Figure 3-46).



Add to Favorites

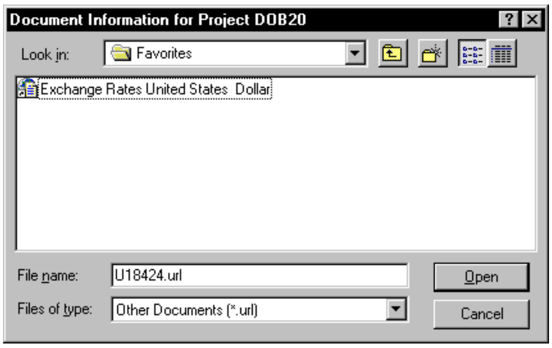
Internet Explorer will create a shortcut to this page on your Favorites menu.

Name: Exchange Rates United States Dollar

Create in: Favorites

*Figure 3-46. Internet Add To Favorites Dialog*

- Create a new document aspect in **Structure Builder** (can be any type, e.g. **URL Example**).
- Open the document in **Summary** view in the Structure Builder for this document, resulting in the display of the **Document Information** form.
- Navigate to the **File** page of the **Document Information** form.
- Press the **Attach** button (see Figure 3-43).
- Navigate to the directory where you saved the URL shortcut and select the shortcut (for an example see Figure 3-47).



Document Information for Project DOB20

Look in: Favorites

Exchange Rates United States Dollar

File name: U18424.url

Files of type: Other Documents (*.url)

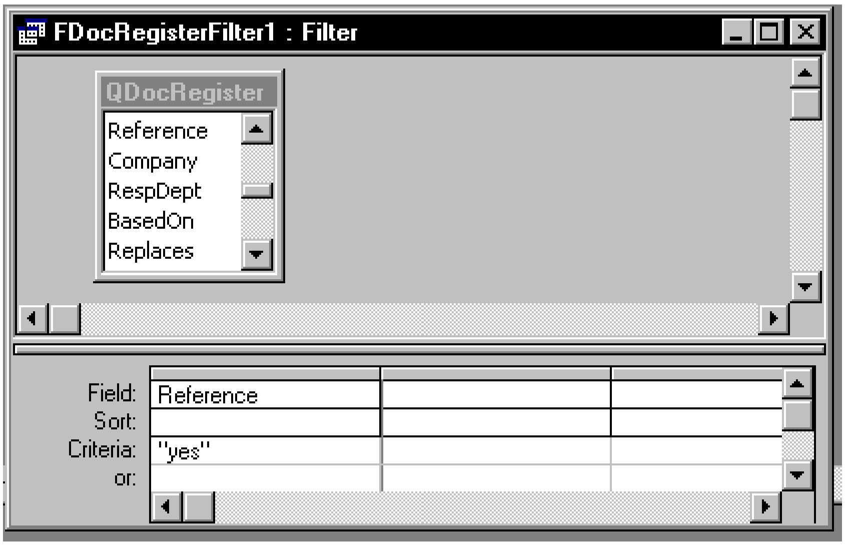
*Figure 3-47. Attach URL Shortcut*

- Choose **Reference** or **Copy** in the Copy into Project dialog.
- Opening the document aspect either from **Document Information** directly or from **Structure Builder** with the view **Document** results in starting the **Internet Explorer** with the respective address.

Note that this example was described to illustrate the use of the **Attach** function. A faster way to handle an Internet address as document would be to create a new document aspect in **Structure Builder** as a reference to this url-shortcut (see Chapter 3.5.3.1 Add a Document)

### Example: How to Search for Referenced Files

Select **Records | Edit Filter | Advanced Filter** and enter a search criteria as shown below:



Field: Reference
Criteria: "yes"

*Figure 3-48. Search for Referenced Files*

### 3.6.1.7 Move and Rename Document Files

If you want to rename or move the file related to a document please follow these steps:

1. Choose **Move/Rename** from the **File** menu. This will result in a file selection dialog.
2. Select the path file name for the destination and press **OK**.

**Remark**:
If you move the file outside the scope of the project, (e.g. to your local PC disk) the dynamic data update will not be performed when opening /printing the file. Moreover, other users might not have access to the file.

### 3.6.1.8 Close the Document Information Form

- **Close**
  If you select the menu **Close** from the **File** menu, the form will be closed but the Document Builder application is still active. This allows a much faster start-up when opening the **Document Information** Form again.
- **Exit**
  If you choose **Exit** from the **File** menu, the **Document Builder** application is totally terminated.

## 3.6.2 Configuration of Templates

**What is a Template?**

A template is a document with a certain layout, used as a base for other documents. A fax template for example provides you with the layout for a fax.

Whenever you create a new document, you can select a template (also called “document type”) to base the document on. This selection is done via the **Document Types** selection box popping up after choosing **Add | Document** in the Structure Builder's *Object* window (see Figure 3-2).

The file that contains the template is associated with a tool based on the file extension, e.g. the file extension “doc” is associated with MS Word. Based on the file extension of the template, you can control which tool is to be used to work on the related document.

**What Kinds of Templates are Shipped with Document Builder?**

Document Builder is shipped with a variety of predefined templates for technical purposes and as examples. There is a number of Word templates including IAD templates as well as some Excel templates.

Also, there are examples of other types of documents like e.g. an URL example (Internet address), a HTM example (HTM page), a PDF example (Acrobat) and a Binder example (MS Binder) to illustrate the easy integration of third party applications into **Document Builder.**

**Binder Example Template and Usage for Document Packages**

Especially interesting is the possibility to integrate *binders* in **Document Builder.** A binder offers the possibility to combine several documents into one logical unit, even different kind of documents - with the restriction that they have to originate in Microsoft Office products, i.e. Word, Excel, Powerpoint.

The documents are contained completely in the binder so that only one file has to be handled even if this binder contains many documents. The drawback is that once the documents are contained in the binder, they loose all connection with the original documents and are therefore not automatically updated if the original is modified.

The use of a binder is therefore recommended for approved and frozen documents only and offers an easy but effective way to handle complete **document packages**. All documents in the binder can be printed in a user-defined order, having a common header and/or footer and also contiguous page numbers.

For more information on how to handle binders please refer to the Microsoft documentation.

**Are All Templates Dynamic Documents?**

First of all, only Word or Excel documents can be dynamic, with Word offering the possibility to insert *document* attributes as well as *aspect* attributes and Excel, for this release, only offering the insertion of *document* attributes.

Most Word and Excel templates shipped with Document Builder are already dynamic, some are not. But when a new document aspect is created from any Word or Excel template, this document is made dynamic automatically. This means also that any user-defined templates are converted into dynamic documents.

Furthermore, if a Word or Excel file is *copied* to form a document aspect (either when adding a new document as file copy in **Structure Builder** or when attaching another file as copy in **Document Builder**), this document is also made dynamic automatically.

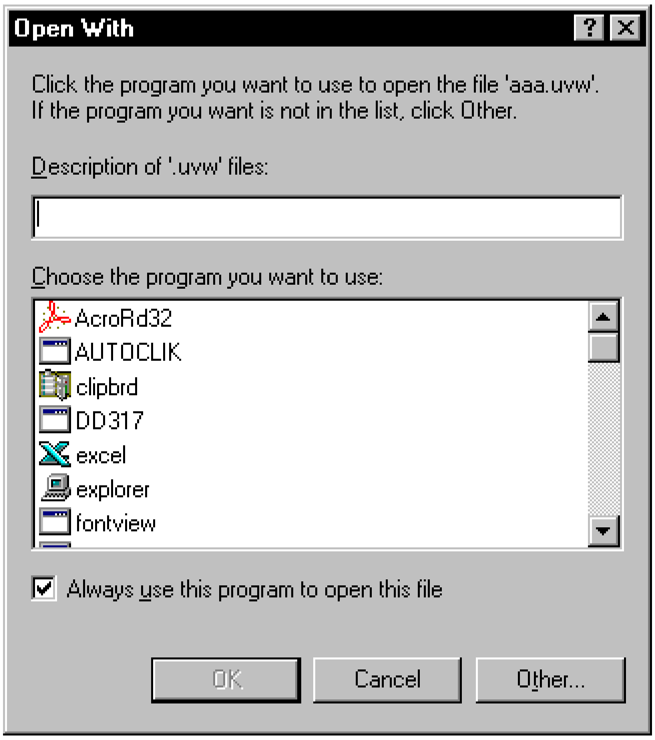
### 3.6.2.1 How to Associate a Template with an Application

- Open the Explorer and double-click the template to be associated. If no association exists yet, this results in an **Open With** dialog box in which you can choose the program you want to use (see Figure 3-49).
- Enter a file description and select the tool the file extension is to be associated with by either choosing an entry from the list below or clicking **Other** and browsing through the file system till the required program can be selected.

  **Example**:
  either select "EXCEL" from the list or search for the program **msoffice\excel\excel.exe** in the **Open With** selection box resulting in clicking the **Other** button.
- If you have several versions of a tool installed, you can select the version to be used. However, only one version at a time can be used for one specific file extension.

**Remark**:

With the menu item **View | Options** of the Explorer and the selection **File Types** you can control the association, but only, if you have entered a file description during the association process described above.



Open With

Click the program you want to use to open the file 'aaa.uvw'.
If the program you want is not in the list, click Other.

Description of '.uvw' files:

Choose the program you want to use:

AcroRd32
AUTOCLIK
clipbrd
DD317
excel
explorer
fontview

☑ Always use this program to open this file

*Figure 3-49. Explorer* ***Open With*** *Dialog*

### 3.6.2.2 Document Builder Dynamic Templates

Templates for MS Word and MS Excel can have a connection to the **Document Builder**’s MS Access database, causing all administrative attributes used in the document to be updated from the database when the document is opened or printed (see also Chapter 3.5.4 How to Handle Dynamic Data in Documents). Dynamic data can either be included in the footer/header or the body section of a Word or Excel document. The update of dynamic data within the document can be activated or deactivated (see Chapter 3.6.5 Configuration of Dynamic Document Data Update).

### 3.6.2.3 Storage of Templates

Templates can be stored either

- in the *central* template library or
- in a *project specific* template library.

Within the central library, there is a distinction between the storage of templates provided along with the product and templates defined by the user.

The **central library** is located in 2 directories:

1. *abtool1***dob***release***templ\sta***tool* for templates provided along with the product (the abbreviation *sta* stands for *standard*)
2. *abtool1***dob***release***templ\cus***tool* for user defined templates
(the abbreviation *cus* stands for *customer*)

where *tool* is a logical identifier of the tool (e.g. "word" or "excel")

**WARNING**

- Please do *not* store your own templates in “...**sta**\...” as this directory is meant for standard templates.
- The templates provided along with the product are just examples - there is no maintenance guarantee.
- Templates in the central library are *not* considered in a project backup!
- User-defined global templates stored underneath *abtool1***dob***release***templ\cus** will be lost if this version of Document Builder is uninstalled - it is strongly recommended to save them at some other place before deinstalling!

The **project specific library** is located in:

*advabld*:**data***project***dob****templ**

**How to select a Template?**

When a new document aspect is created in the **Structure Builder** (see Section 3.5.3, How to Handle Documents Within the Structure Builder) by choosing **Document** in the **New** window, a selection of Document Types (or templates) is offered in a selection box. The templates are further described by their suffix, thereby indicating the application type for this template, and the language of the template contents.

Suffixes for main templates provided with this release are:

- **doc** (for Word documents)
- **xls** (for Excel documents).

The **Document Builder** is installed with a sufficient selection of pre-defined templates. However, if the need arises, the user can define new templates and add them to the **Document Builder** template library. This procedure is described in the following subchapters.

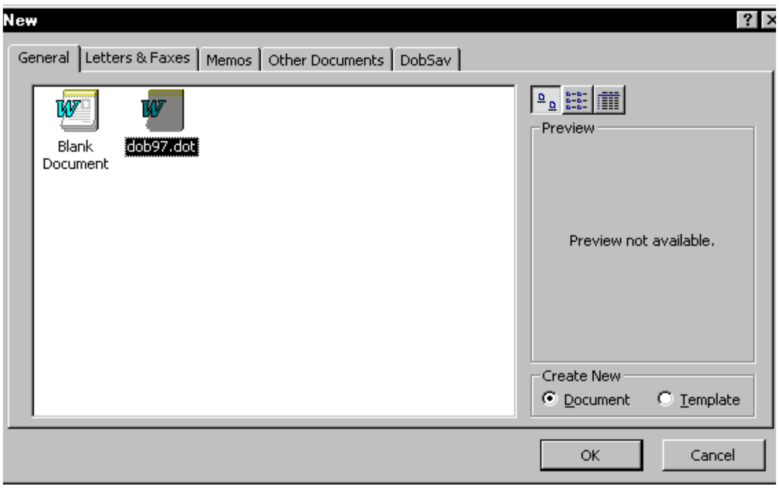
### 3.6.2.4 Create a New Dynamic Word Template

A dynamic Word template is a template containing dynamic **Document Builder** data, also called document attributes, or aspect attributes in form of document property variables which are automatically updated when opening the Word document based on this template (for a more detailed discussion about dynamic documents please refer to Chapter 3.5.4 How to Handle Dynamic Data in Documents).

Note that to enable the creation of a dynamic template, the dynamic data update must be activated (see Chapter 3.6.5 Configuration of Dynamic Document Data Update)

In order to create a new Word template with dynamic data in the *project* specific library, please follow these steps:

1. Start MS Word and choose **File | New** to create a new document. This results in popping-up the **New** dialog of Word (see Figure 3-50).



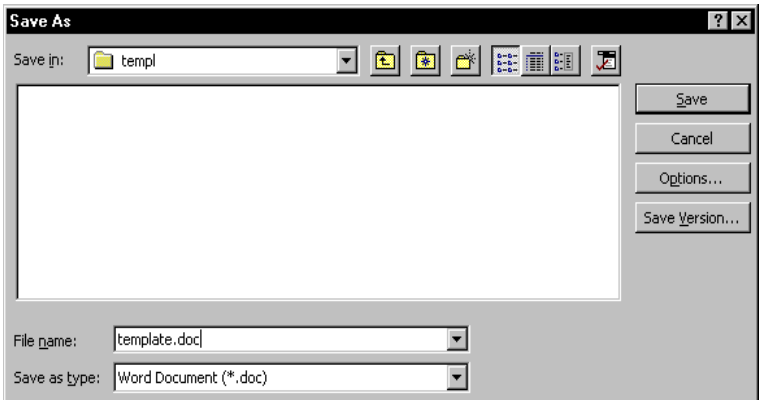
Preview not available.

Create New
● Document ○ Template

*Figure 3-50. MS Word **New** Dialog*

2. Select the template **dob97.dot** and press **OK**. This results in the MS Word **SaveAs** dialog (see Figure 3-51).

   Using the **dob97.dot** template enables you to create a dynamic template. If you use any other template in this dialog, you cannot create a dynamic template



Save in: templ
File name: template.doc
Save as type: Word Document (*.doc)

*Figure 3-51. MS Word **Save As** Dialog*

3. In the **Save As** dialog, store the template in the project's template directory and name it **template.doc**(see Figure 3-51).

**NOTE**

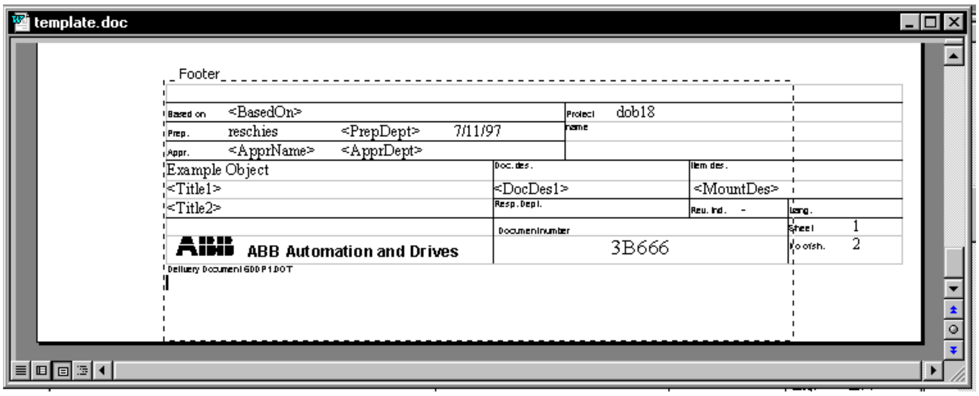
The name of the template must be **template.doc** at this time.

**NOTE**

At this stage, please store your template in a project specific library.

**Example**:
Store the template as *advabld1***data***project***dob\templ\template.doc**.

4. After pressing **Save** it might take a while until the database connection is performed. Open the footer by selecting **Header and Footer** from the **View** menu and create a layout for your footer (typically by inserting a table). Figure 3-52 illustrates an example of a footer in a Word document



template.doc

Footer

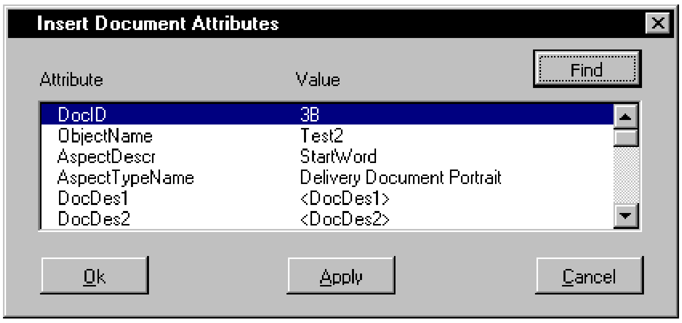
| | | | |
|---|---|---|---|
| Based on | <BasedOn> | Project name | dob18 |
| Prep. | reschies <PrepDept> 7/11/97 | | |
| Appr. | <ApprName> <ApprDept> | | |

| | | |
|---|---|---|
| Example Object | Doc. des. | Item des. |
| <Title1> | <DocDes1> | <MountDes> |
| <Title2> | Resp. Dept. | Rev. Ind. -<br>Lang. |
| ABB Automation and Drives | Document number<br>3B666 | Sheet 1<br>No of sh. 2 |

Delivery Document GDDP1.DOT

*Figure 3-52. Example of a MS Word Footer*

5. In order to position the administrative attributes of the database (in other words, the dynamic data), position the cursor at the intended location and select **Insert Document Attributes** from the **Dynamic Data** menu or from the right hand mouse button context sensitive menu which pops-up the dialog shown in Figure 3-53 (see also Chapter 3.5.4.2 Insertion of Document Attributes into a Document).



Insert Document Attributes

| Attribute | Value |
|---|---|
| DocID | 3B |
| ObjectName | Test2 |
| AspectDescr | StartWord |
| AspectTypeName | Delivery Document Portrait |
| DocDes1 | <DocDes1> |
| DocDes2 | <DocDes2> |

*Figure 3-53. **Insert Document Attributes** Selection Box*

6. Select **the attribute you want to insert and press OK**.

7. Now save the file using any name you like - but do use a *different* name than **template.doc**.
   Only if you have not completed your template definition, save the file using the name **template.doc**.

   **NOTE**

   The template can now be saved in a project specific library as well as in the central library.

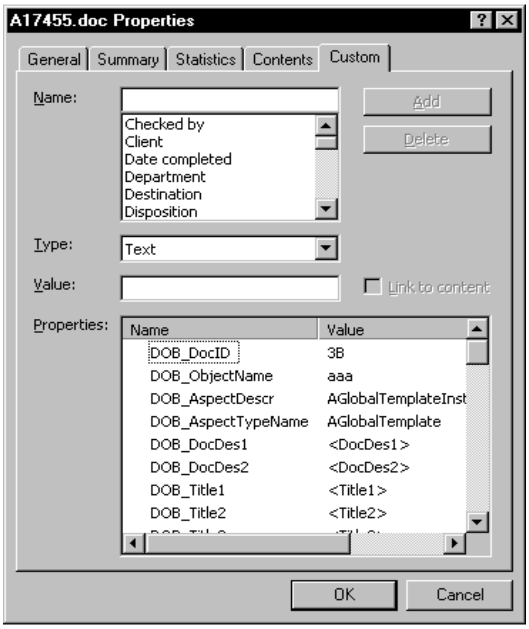
   **Example**:
   Store a *project* specific template as
   *advabld1*\**data**\*project*\**dob**\**templ**\*new_template_name*.**doc**.

   **Example**:
   Store a *global* template as
   *abtool1*\**dob**\*release*\**templ**\**cus**\*new_template_name*.**doc**.

8. Register the new template as a project template or a global template to make it available for the creation of new documents (for further information please refer to Chapter 3.6.2.7 Register a New Template)

   **NOTE**

   You can also see all available Document Builder document properties and their values by selecting **File | Properties | Custom** when having opened the template or a document in MS Word (see Figure 3-54). Please note that values in angular brackets are placeholders only (e.g. <Title1>).



Type: Text

☐ Link to content

| Name | Value |
|---|---|
| DOB_DocID | 3B |
| DOB_ObjectName | aaa |
| DOB_AspectDescr | AGlobalTemplateInst |
| DOB_AspectTypeName | AGlobalTemplate |
| DOB_DocDes1 | <DocDes1> |
| DOB_DocDes2 | <DocDes2> |
| DOB_Title1 | <Title1> |
| DOB_Title2 | <Title2> |

*Figure 3-54. MS Word **Document Builder** Custom Properties*

### 3.6.2.5 Create a New Dynamic Excel Template

A dynamic Excel template is a template containing dynamic **Document Builder** data, also called document attributes, in form of document property variables which are automatically updated when opening the Excel document based on this template (for a more detailed discussion about dynamic documents please refer to Chapter 3.5.4 How to Handle Dynamic Data in Documents).

Note that to enable the creation of a dynamic template, the dynamic data update must be activated (see Chapter 3.6.5 Configuration of Dynamic Document Data Update)

In order to create a new Excel template with dynamic data in the project specific library, please follow these steps:

1. Start MS Excel and choose **File | New** to create a new document. This results in popping-up the **New** dialog of Excel.

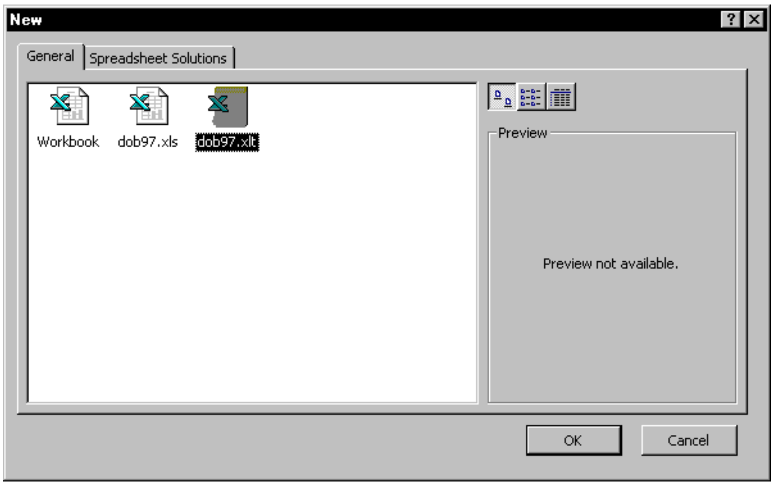
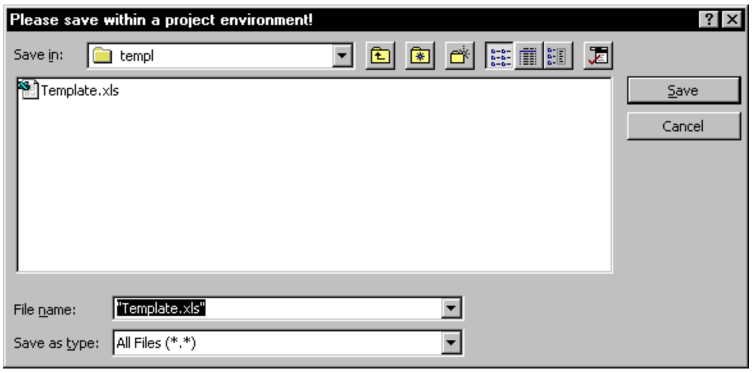


*Figure 3-55. MS Excel **New** Dialog*

2. Select the template **dob97.xlt** and press **OK**. This results in the MS Excel **Save As** dialog (see Figure 3-55).

   Using the **dob97.xlt** template enables you to create a dynamic template. If you use any other template in this dialog, you cannot create a dynamic template.



Save in: templ

File name: "Template.xls"

Save as type: All Files (*.*)

*Figure 3-56. MS Excel* ***Save As*** *Dialog*

3. In the **Save As** dialog, store the template in the project's template directory and name it **Template.xls** (see Figure 3-56).

**NOTE**

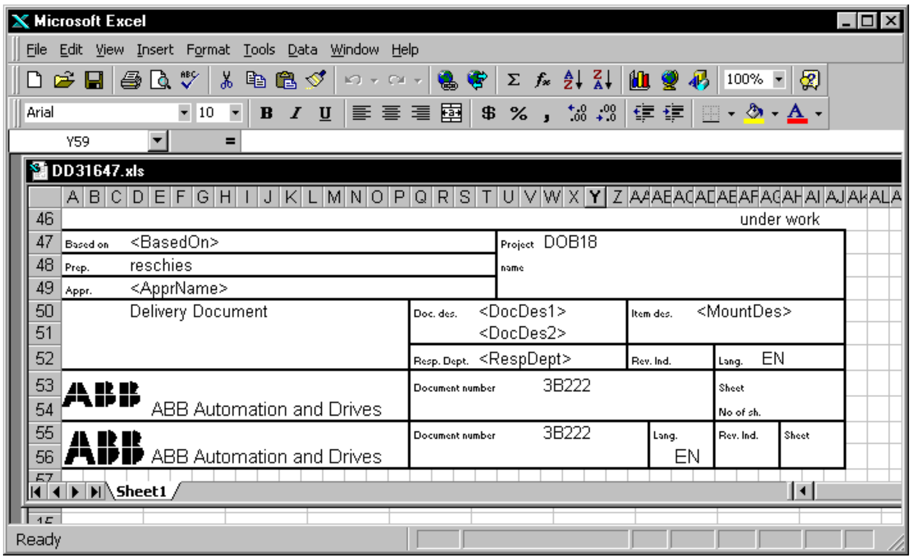
The name of the template must be **Template.xls** at this time.

**NOTE**

At this stage, please store your template in a *project* specific library.

**Example**:
Store the template as *advabld1***data***project***dob\templ\Template.xls**.

4. After pressing **Save** it might take a while until the database connection is performed. Now the layout of a footer can be designed. Figure 3-57 illustrates an example of a footer in a Excel document.



under work

Based on <BasedOn>
Prep. reschies
Appr. <ApprName>
Project name DOB18
Delivery Document
Doc. des. <DocDes1>
<DocDes2>
Item des. <MountDes>
Resp. Dept. <RespDept>
Rev. Ind.
Lang. EN
ABB Automation and Drives
Document number 3B222
Sheet
No of sh.
ABB Automation and Drives
Document number 3B222
Lang. EN
Rev. Ind.
Sheet

*Figure 3-57. Example of a MS Excel Document Footer*

5. In order to insert administrative attributes into the footer, position the cursor at the intended location and choose **Insert Document Attributes** from the **Dynamic Data** menu or from the right hand mouse button context sensitive menu, resulting in the pop-up menu depicted in Figure 3-53.

6. Select the attribute to be inserted and press **OK** or **Apply**.

7. Repeat these steps for all attributes to be positioned.

8. Now save the template using any name you like - but do use a *different* name than **Template.xls**.
   Only if you have not completed your template definition yet, save the file using the name **Template.xls**.

**NOTE**

The template can now be saved in a project specific library as well as in the central library.

**Example**:
store a *project* specific template as
*advabld1*\**data**\*project*\**dob**\**templ**\*new_template_name*.**xls**

**Example**:
store a *global* template as
*abtool1*\**dob**\*release*\**templ**\**cus**\*new_template_name*.**xls**

9. Register the new template as a project template or a global template to make it available as a base for newly created documents (for further information please refer to Chapter 3.6.2.7 Register a New Template)

**NOTE**

You can also see all available Document Builder document properties and their values when selecting **File | Properties | Custom** after having opened the template or a document in MS Excel (see Figure 3-54). Please note that values in angular brackets are placeholders only (e.g. <Title1>)

### 3.6.2.6 Create Another New Templates

Any other template (e.g. a PowerPoint Template) can be defined using the related application and then be added to **Document Builder** by registering it.

Please ensure that you have associated the file extension of the template (file) with a tool (see Chapter 3.6.2 Configuration of Templates).

### 3.6.2.7 Register a New Template

**Why to Register a Template**

In order to create a new document based on a template in the **Structure Builder**'s *Object* window, a template must be chosen from the **Document Types** selection box (see Figure 3-2).

For a new template to appear in this list, it must be registered first. A template can be registered

- as a *project* specific template or
- as a *global* template.

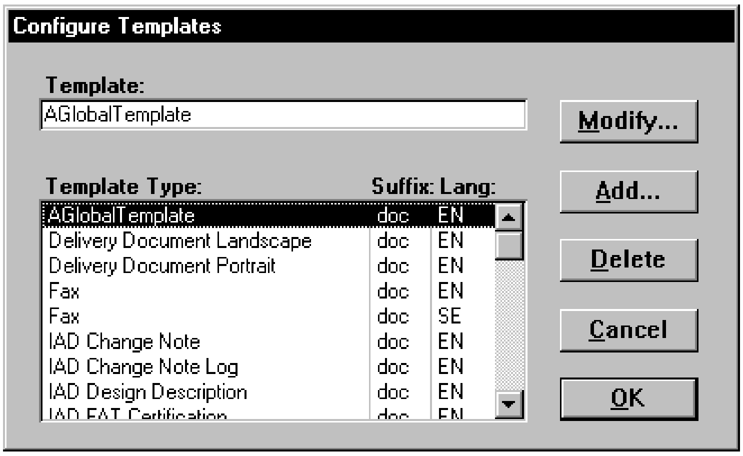
*Project* specific templates are available only in the project they are registered with and should be located in the project specific library *advabld1***data***project***dob****templ**.

*Global* templates are available in the project they are registered with and in all subsequently newly created projects.

Files of global templates are located in the central library *abtool1***dob***release***templ****sta**\... for standard templates or *abtool1***dob***release***templ****cus**\... for customer specific templates (see also Section 3.6.2, Configuration of Templates).

**How to Register a Template**

1. Open the **Document Information** Form for any document aspect in the respective project (see Chapter 3.6.1.1 Open the Document Information Form).
2. Chose **Options** | **Configure Templates** from the **Document** menu, resulting in the template selection box depicted in Figure 3-58.



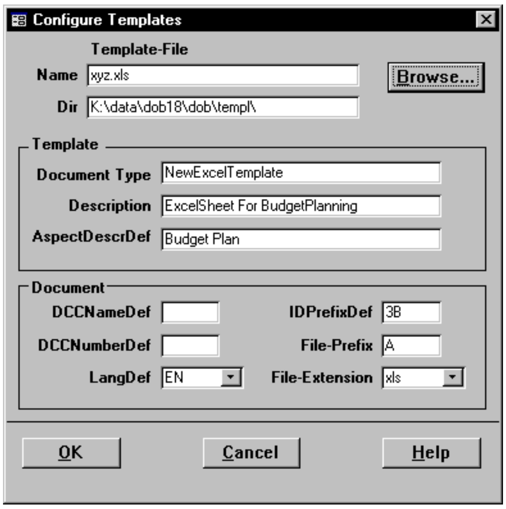
Template: AGlobalTemplate

| Template Type: | Suffix: | Lang: |
|---|---|---|
| AGlobalTemplate | doc | EN |
| Delivery Document Landscape | doc | EN |
| Delivery Document Portrait | doc | EN |
| Fax | doc | EN |
| Fax | doc | SE |
| IAD Change Note | doc | EN |
| IAD Change Note Log | doc | EN |
| IAD Design Description | doc | EN |
| IAD FAT Certification | doc | EN |

*Figure 3-58. **Configure Templates** Template Selection*

3. Press the **Add** button, resulting in the **Configure Templates** dialog box of Figure 3-59.

4. Press the **Browse** button to select the file you wish to register as new template.



Template-File

Name: xyz.xls

Dir: K:\data\dob18\dob\templ\

Template

Document Type: NewExcelTemplate

Description: ExcelSheet For BudgetPlanning

AspectDescrDef: Budget Plan

Document

DCCNameDef:

DCCNumberDef:

LangDef: EN

IDPrefixDef: 3B

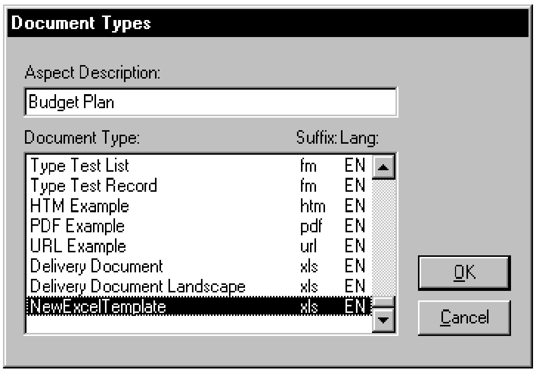
File-Prefix: A

File-Extension: xls

*Figure 3-59. **Configure Template** Dialog*

5. Fill in appropriate values for
   - Document Type:
     this is the string appearing in the **Document Type** selection list of the **Document Types** dialog appearing after having selected **Add | Document** in the **Structure Builder**’s *Object* window (see Figure 3-60).

- Description:
  for internal use only, to describe the document type this template is meant for.
- AspectDescrDef:
  this is the default description for any document aspects created from this template and appears as string in field **Aspect Description** of the **Document Types** dialog appearing after having selected **Add | Document** in the **Structure Builder**'s *Object* window (see Figure 3-60).
- All other fields if required.



Aspect Description: Budget Plan

| Document Type: | Suffix: | Lang: |
|---|---|---|
| Type Test List | fm | EN |
| Type Test Record | fm | EN |
| HTM Example | htm | EN |
| PDF Example | pdf | EN |
| URL Example | url | EN |
| Delivery Document | xls | EN |
| Delivery Document Landscape | xls | EN |
| NewExcelTemplate | xls | EN |

*Figure 3-60. **Document Types** Selection Box*

6. Press **OK** to finally register the new template.

7. If the template file resides in the central library, i.e. somewhere underneath *abtool1*\dob\31r0\templ, the question "Do you want to store this template as a global template available in new projects?" pops up.

   If answered with "Yes", the new template is available not only in this project but also in all projects subsequently created (this is achieved by storing the details of the new template in database **reg32.mdb** in directory *abtool1***dob***release***reg** which serves as a template database for all newly created projects).

   If answered with "No", the new template is available only in the project it was registered with.

**WARNING**

- **All user-defined *global* template *files* which were stored with the previous Document Builder release underneath *abtool1*\dob\<previous-release>\templ will get lost when deinstalling the previous release before installing this release! It is therefore strongly recommended to save them somewhere else before activating Deinstall!**
- **All user-defined *global* templates which were *registered* with the previous Document Builder release will not be available in this release - if they are still required it is necessary to register them again with this release!**

### 3.6.2.8 Modify an Existing Template

**Why to Modify a Template**

The need to modify an existing template arises if e.g. another, updated, file should be the base of the template or if the name or the aspect instance default description should be modified.

**NOTE**

All modifications made to an existing template apply only to subsequently on the base of this template created documents. Already existing documents based on this document remain unchanged.

**How to Modify a Template**

1. Open the **Document Information** Form for any document aspect in the respective project (see Chapter 3.6.1.1 Open the Document Information Form).
2. Chose **Options | Configure Templates** from the **Document** menu, resulting in the template selection box depicted in Figure 3-58.
3. Select the template to be modified and press the **Modify** button, resulting in the **Configure Templates** dialog box of Figure 3-59.
4. Enter the necessary modifications and press **OK** to submit them.

### 3.6.2.9 Delete an Existing Template

1. Open the **Document Information** Form for any document aspect in the respective project (see Chapter 3.6.1.1 Open the Document Information Form).
2. Chose **Options | Configure Templates** from the **Document** menu, resulting in the template selection box depicted in Figure 3-58.
3. Select the template to be deleted and press the **Delete** button.

**NOTE**

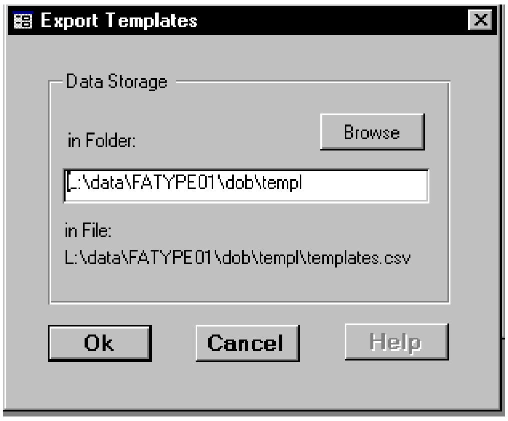
Templates of which existing document aspects were created cannot be deleted due to the fact that some template information (template name and template description) is displayed in the Document Information form for these aspects.

**NOTE**

Templates which were defined as global templates are only deleted for the current project. The global definition still remains.

## 3.6.3  Export Templates

The Export Templates function allowed to export for a certain project all document template definitions into a file system. These template definitions can then be re-imported into the same or into another project. The function is meant to be used to build up a kind of library project with a set of templates based on the appropriate business, then to export these set of templates and to reuse the templates in real projects via **Import Templates**. To start the export function select menu item **Document** / **Options** / **Export Templates**, dialog ask for export directory see Figure 3-61.



in Folder: L:\data\FATYPE01\dob\templ

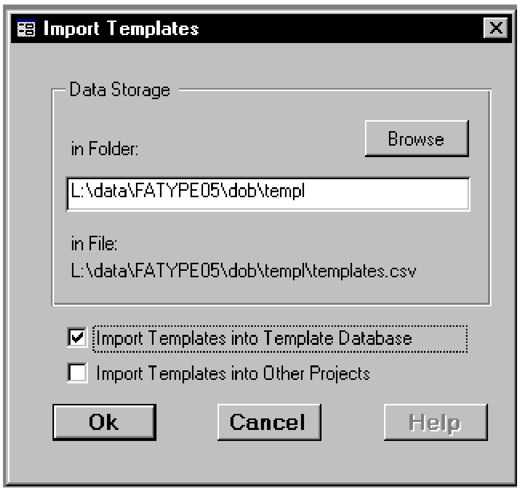
in File: L:\data\FATYPE01\dob\templ\templates.csv

*Figure 3-61. Export Templates Dialog*

## 3.6.4  Import Templates

It is the counterpart of the Export Templates function and it presents the possibility to import the previously exported templates. The templates will be imported into

- The actual project
- The template database used for newly created projects if so requested see Figure 3-62
- Other project if so requested see Figure 3-63.



Data Storage

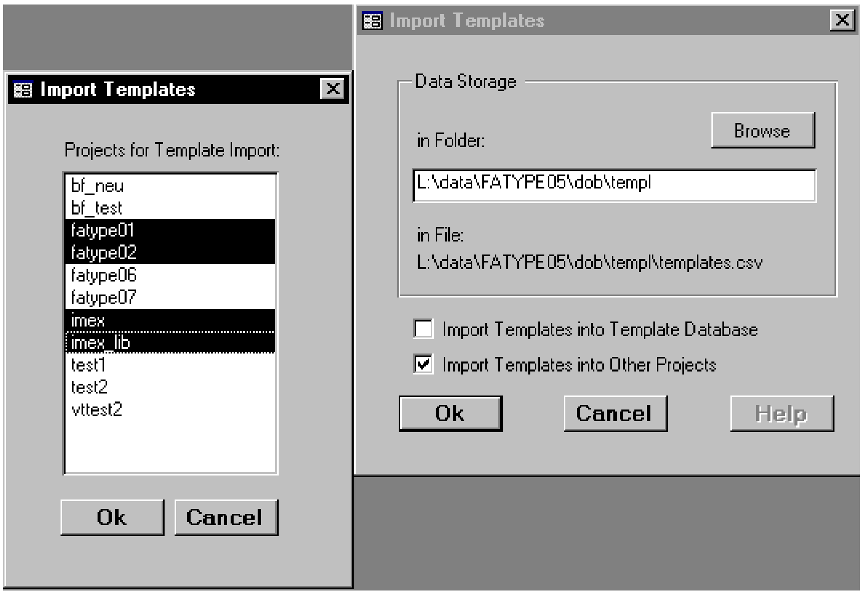
in Folder:

L:\data\FATYPE05\dob\templ

in File:
L:\data\FATYPE05\dob\templ\templates.csv

☑ Import Templates into Template Database
☐ Import Templates into Other Projects

*Figure 3-62. Import Templates into Template Database Dialog*



Projects for Template Import:
- bf_neu
- bf_test
- fatype01
- fatype02
- fatype06
- fatype07
- imex
- imex_lib
- test1
- test2
- vttest2

Data Storage

in Folder:

L:\data\FATYPE05\dob\templ

in File:
L:\data\FATYPE05\dob\templ\templates.csv

☐ Import Templates into Template Database
☑ Import Templates into Other Projects

*Figure 3-63. Import Templates into Other Projects Dialog*

At import the already existing template definitions in the current project which have

- the same name
- the same presentation string and
- the same file name

are left unchanged, all others are added.

## 3.6.5 Configuration of Dynamic Document Data Update

The automatic update of document or aspect attributes (see Chapter 3.6.2 Configuration of Templates) inserted in a document can be switched on or off.

The *advantage* of switching *off* the automatic update lies in faster execution of **Create**, **Open** or **Print** actions for documents.

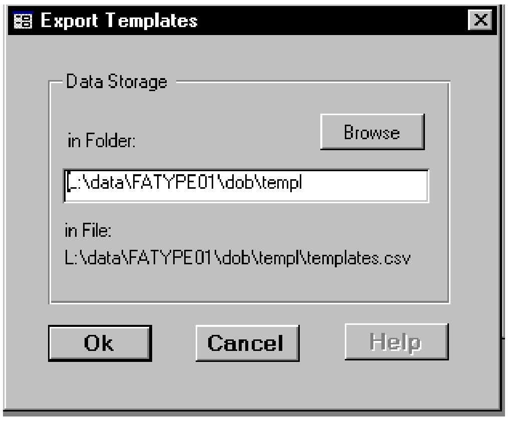
The *disadvantage* of switching *off* the automatic update is that *some* administrative attributes of a document might not be up to date.

Example:
If the name of the object containing the document aspect is modified in **Structure Builder** and automatic update is switched off, **Document Builder** still shows the old object name. Also, if reference designations for this object are changed, this change does not show in **Document Builder**.

If, on the other hand, the aspect description is modified in **Structure Builder**, this change is automatically synchronized in **Document Builder,** regardless of whether automatic update is switched on or off.

To configure dynamic data update:

1. Open the Document Information form (see Chapter 3.6.1.1 Open the Document Information Form) from the **Structure Builder** using any document aspect.
2. Select **Options | Configure Update** from the **Document** menu which results in the following dialog:

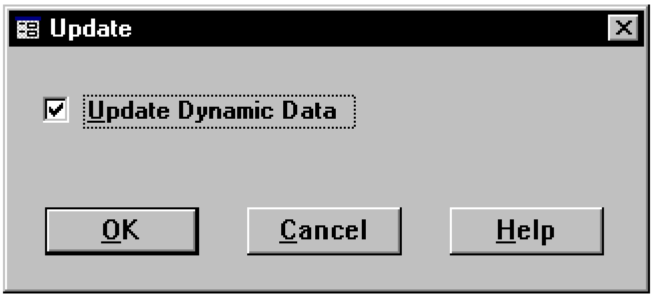


in Folder:
L:\data\FATYPE01\dob\templ

in File:
L:\data\FATYPE01\dob\templ\templates.csv

*Figure 3-64. Export Templates Dialog*

3. Activate or deactivate the **Update Dynamic Data** button and confirm with **OK**.



☑ Update Dynamic Data

*Figure 3-65. Document Builder **Options, Update** Dialog*

**NOTE**

The activation/deactivation of the dynamic data update (for opening and printing documents) is set within the scope of a client (PC specific). Other PCs might have a different setting.

## 3.6.6 Synchronization of Document Administrative Data

As described in Chapter 3.5.3.4 Open a Document and Chapter 3.5.3.5 Print a Document, the

- object name and
- the absolute reference designations (Func-, Loc-, Mount-, ContrDes)

of the object to which a document belongs are updated from the **Structure Builder** database when opening or printing a document, whereas the aspect description of document aspects is always up to date automatically.

As a result, it is possible that of all the documents stored in **Document Builder** some have actual values for the object name and the reference designations and some have not which is particularly irritating when scanning all project documents in the datasheet view of the Information Form.

To synchronize the object names and reference designations for all project documents

Select menu item **Documents | Options | Synchronize All Documents**:

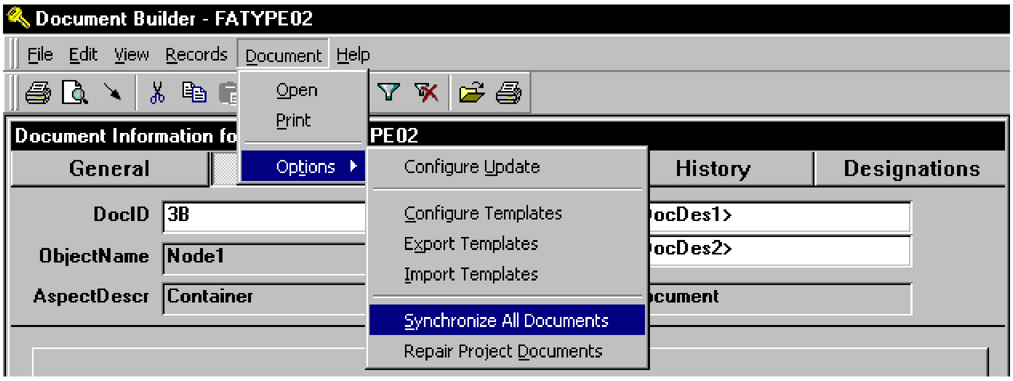


*Figure 3-66. Synchronize All Documents*

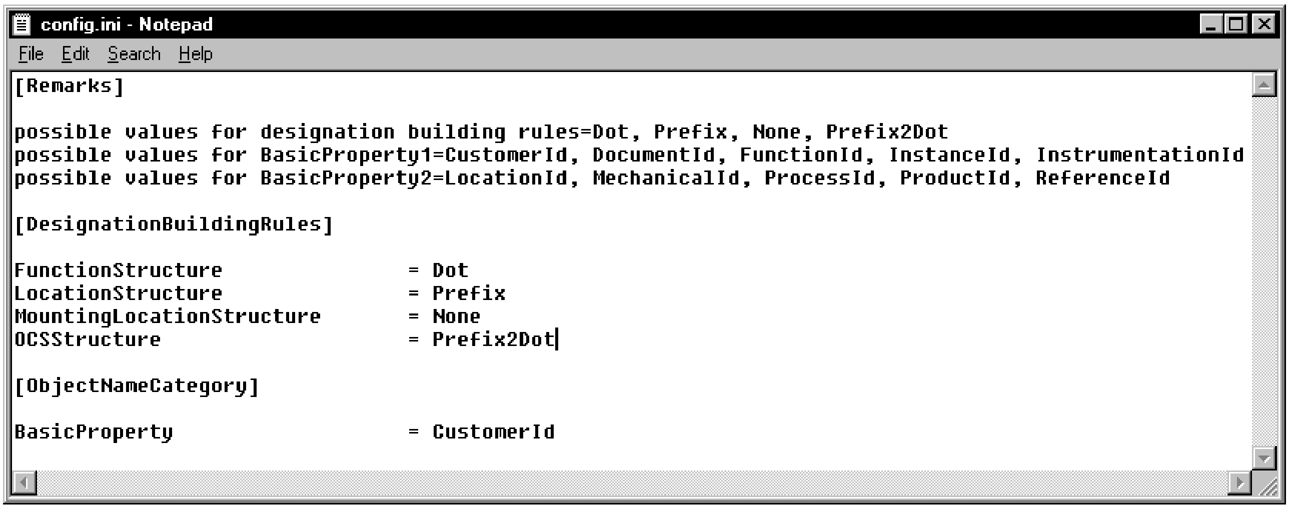
**NOTE**

Please note that execution of the **Synchronize** function might take quite some time, depending on the number of documents contained in the project.

### Building Rules: Reference Designations

The format of the reference designations is determined by building rules. These building rules can be configured for every type of designation by editing a file *config.ini* in the project's database directory *advabld1*\data\<project>\dob\reg. Figure 3-67 shows an example of the **config.ini** file.

Before activating the **Synchronize** function for the first time, the *config.ini* file does not yet exist. You can either write it yourself using a normal editor or you can leave the creation of *config.ini* to the **Synchronize** function. In this case, *Dot* is used as a building rule for all four designations. Also, if entries in *config.ini* have no valid value due e.g. to a typing error, *Dot* is used as building rule.



```
[Remarks]

possible values for designation building rules=Dot, Prefix, None, Prefix2Dot
possible values for BasicProperty1=CustomerId, DocumentId, FunctionId, InstanceId, InstrumentationId
possible values for BasicProperty2=LocationId, MechanicalId, ProcessId, ProductId, ReferenceId

[DesignationBuildingRules]

FunctionStructure              = Dot
LocationStructure              = Prefix
MountingLocationStructure      = None
OCSStructure                   = Prefix2Dot

[ObjectNameCategory]

BasicProperty                  = CustomerId
```

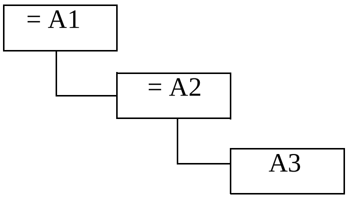
*Figure 3-67. config.ini for* ***Synchronize***

Possible values for the building rule are

- **Dot**
- **Prefix**
- **None**
- **Prefix2Dot**.

Examples:

If you have a hierarchy as follows:



the different building rules for the bottom object would result in the following:

| | |
|---|---|
| Dot: | =A1.A2.A3 |
| Prefix: | =A1=A2A3 |
| None: | =A1A2A3 |
| Prefix2Dot: | =A1.A2A3 |

**Building rule: object name**

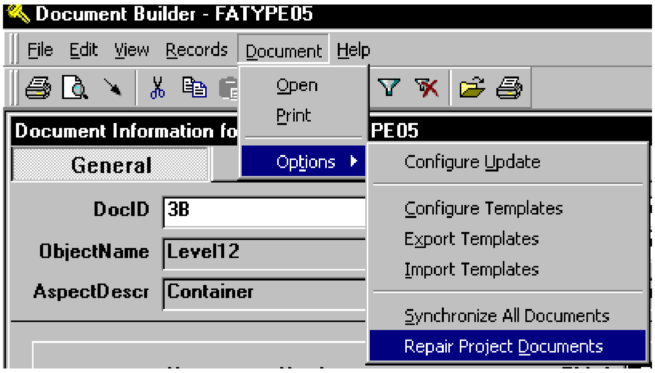
In the same initialization file the category or Basic Property for the object's name attribute is determined. Possible values for the category are:

**CustomerId, DocumentId, FunctionId, InstanceId, InstrumentationId, LocationId, MechanicalId, ProcessId, ProductId, and ReferenceId**.

The default for the Basic Property is **CustomerId**.

## 3.6.7 Repair Project Documents

When importing a project, all project documents are imported as well. In some rare cases it might happen that the internal reference connecting every Word document with Document Builder's Word templates containing code modules failed and, as result, the document could not offer the possibility to insert Dynamic Data. To manage such cases select menu item **Document / Options / Repair Project Documents**, see Figure 3-68.



DocID 3B
ObjectName Level12
AspectDescr Container

*Figure 3-68. Repair Project Documents*

The repair program works asynchronously as icon indicated in the taskbar, see Figure 3-69:

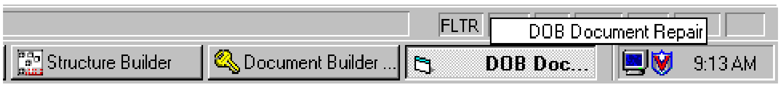


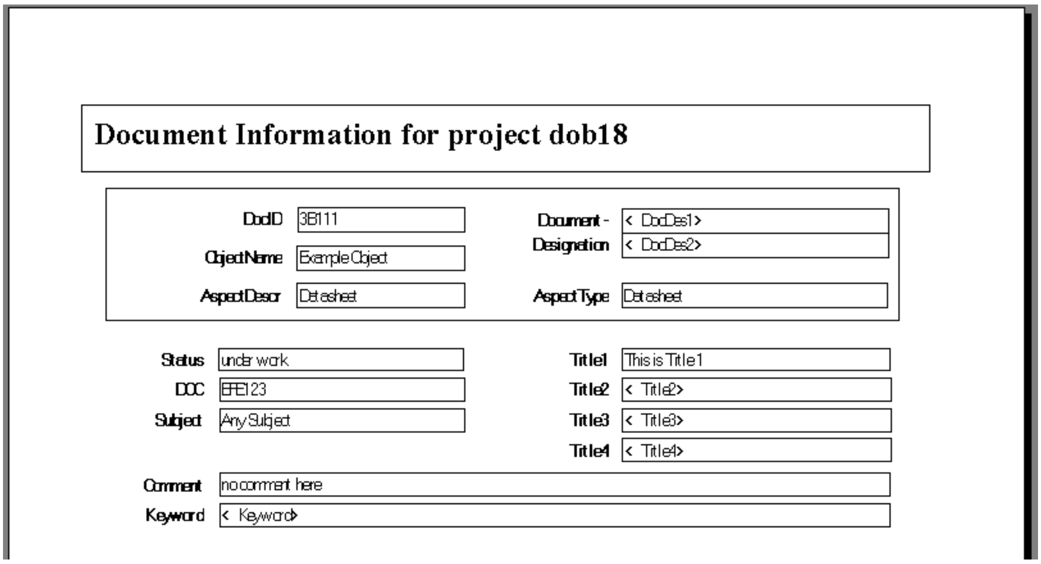
*Figure 3-69. Taskbar Document Repair Program Icon*

## 3.6.8 Configuration of Document Information Reports

In Document Builder, there are two predefined reports printing the administrative data of one or several documents:

- Formsheet report depicting administrative data of one document
- Datasheet report depicting administrative data of several documents.

The following figure illustrates the layout of the formsheet report. To print or preview a report, select **Print** or **Print Preview** from the **File** menu in the **Document Information** Form when either in Formsheet or Datasheet view (see Chapter 3.6.1.5 Open or Print Documents).



**Document Information for project dob18**

| | | | |
|---|---|---|---|
| **DocID** | 3B111 | **Document - Designation** | < DocDes1><br>< DocDes2> |
| **ObjectName** | Example Object | | |
| **AspectDescr** | Datasheet | **AspectType** | Datasheet |
| **Status** | under work | **Title1** | This is Title1 |
| **DOC** | BFE123 | **Title2** | < Title2> |
| **Subject** | Any Subject | **Title3** | < Title3> |
| | | **Title4** | < Title4> |
| **Comment** | no comment here | | |
| **Keyword** | < Keyword> | | |

*Figure 3-70. Cutting of a Formsheet Report*

Both reports can be redefined by the user following these steps:

1. Open the **Document Information** form (see Chapter 3.6.1.1 Open the Document Information Form) from the **Structure Builder** using any document aspect.
2. Select **Print Preview** from the **File** menu.
3. Open the report design mode by pressing the **Design View** button or selecting **Design View** from the **File** menu.
4. The actual modification of the report is performed using MS Access standard functions (please refer to the user manual of MS Access).

# 3.7 Configuration/Application Building Menus and Toolbars

## 3.7.1 Menus

### 3.7.1.1 Document Information Formsheet Menu

The following commands are accessible in the **Document Information** form in formsheet view via the menu:

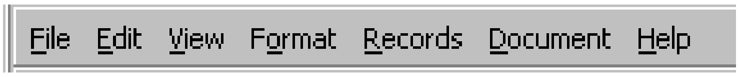


*Figure 3-71. Document Information Formsheet Menu*

**File**

- **Close**
  Close the form but keep the Document Builder application active (see also Section 3.6.1.8, Close the Document Information Form).
- **Save Record**
  Save the modifications done in the data base.
- **Print Preview**
  Opens a report in the preview mode. The report displays administrative data about the actual document (see also Section 3.6.1.5, Open or Print Documents).
- **Print**
  Prints the report showing administrative data about the actual document (see also Section 3.6.1.5, Open or Print Documents).
- **Move/Rename**
  Moves or renames a file attached to a document (see also Section 3.6.1.7, Move and Rename Document Files).
- **Exit**
  Terminates the Document Builder application (see also Section 3.6.1.8, Close the Document Information Form).

**Edit**

- **Undo** typing or **Redo** Typing respectively
  undo or redo the latest typing in a field.
- **Cut**
  Cuts a string selected with the mouse.
- **Copy**
  Copies a string selected with the mouse.

- **Paste**
  Paste the string cut or copied before.

**View**

- **Datasheet**
  Switches to datasheet view.

**Records**

- **Edit Filter/Sort...**

  Offers 3 possible filter types to search for documents

  - **Filter By Form**
  - **Filter By Selection**
  - **Advanced Filter / Sort**
    (see Section 3.6.1.3, Search for Documents).
- **Apply Filter/Sort**
  Performs the Filter edited before (see also Section 3.6.1.3, Search for Documents).
- **Remove Filter / Sort**
  Switches to datasheet view with no filter applied, i.e. all documents in the project are shown.

**Document**

- **Open**
  Opens a document (see Section 3.6.1.5, Open or Print Documents).
- **Print**
  Prints a document (see Section 3.6.1.5, Open or Print Documents).
- **Options**
  Opens the option dialog containing
  - **Configure Update** (see Section 3.6.1.3, Search for Documents)
  - **Configure Templates** (see Section 3.6.2, Configuration of Templates)
  - **Export Templates** (see *Bulk Data Handling and Reuse Reference Manual*)
  - **Import Templates** (see *Bulk Data Handling and Reuse Reference Manual*)
  - **Synchronize All Documents** (see Section 3.6.6, Synchronization of Document Administrative Data)
  - **Repair Project Documents**.

**Help**

- **Contents**
  Opens help contents.
- **Search**
  Opens a dialog box to search for keywords in help.
- **Access Contents and Index**
  Opens Access online help.
- **How to use Help**
  Opens help contents.
- **Release Notes**
  Opens release notes.
- **Show Project History**
  Project life cycle information and version
- **Check Installation**
  AEWcheck utility starts up to evaluate the DOB environment.
- **About Document Builder**
  Displays the actual version of the Document Builder.

### 3.7.1.2 Document Information Datasheet Menu

The following commands are accessible in the **Document Information** form in datasheet view via the menu:

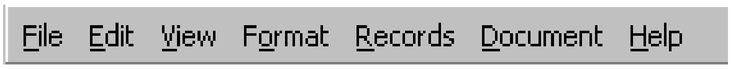


*Figure 3-72. Document Information Datasheet Menu*

**File**

Contains same items as in the Formsheet view

**Edit**

Contains same items as in the formsheet view plus the following menu entries:

- **Find**
  Searches for a certain string in one or several attributes of one or several documents (see also Section 3.6.1.3, Search for Documents).
- **Replace**
  Replaces a string in one or several attributes of one or several documents (see also Section 3.6.1.4, Modify Document Attributes).
- **Replace Null Values**.

**View**

**Formsheet**
Switches back to the formsheet.

**Format**

- **Font**...
  Font settings for the values displayed.
- **Row Height...**
  Settings for row dimensions.
- **Column Width...**
  Settings for columns dimensions.
- **Hide Columns**
  Hide columns on the screen.
- **Unhide Columns**
  Show columns hidden before.
- **Freeze Columns**
  Fix certain columns that they are not scrolled out of the window.
- **Unfreeze Columns**
  Unfreeze all columns frozen before.
- **Grid**
  Define the gridlines of the datasheet.

**Records**

- **Go To**
  Jump to a certain row in the datasheet (first, last, previous, next).
- **Refresh**
  Refresh the contents of the datasheet.
- **Quick Sort**
  Sort a column either ascending or descending.
- **Edit Filter/Sort...**
  Same as in the formsheet view
- **Apply Filter/Sort**
  Same as in the formsheet view
- **Remove Filter / Sort**
  Same as in the formsheet view.

**Document**

Same as in the formsheet view.

**Help**

Same as in the formsheet view.

## 3.7.2 Toolbars

### 3.7.2.1 Document Information Formsheet Toolbar

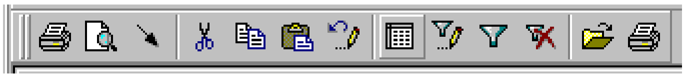


*Figure 3-73. Document Information Formsheet Toolbar*

The buttons are quickly described from left to right:

- **Print Formsheet**
  Prints the report showing administrative data about the actual document.
- **Preview Formsheet**
  Opens a report in the preview mode. The report displays administrative data about the actual document.
- **Close**
  Close the form but keep the Document Builder application active (see also Section 3.6.1.8, Close the Document Information Form).
- **Cut**
  Cut a string selected with the mouse.
- **Copy**
  Copy a string selected with the mouse.
- **Paste**
  Paste a string cut or copied before.
- **Undo**
  Undo most recently changed field or undo whole record (see also related menu entries).
- **Datasheet View**
  Switches to datasheet view.
- **Edit Filter / Sort**
  Opens the Edit Filter dialog (see Section 3.6.1.3, Search for Documents).
- **Apply Filter / Sort**
  Performs the Filter edited before (see also Section 3.6.1.3, Search for Documents).
- **Remove Filter / Sort**
  Removes existing filter, all documents are now available and can be accessed by scrolling through with the scroll buttons at the left hand bottom of the form.
- **Open Document**
  Opens the current document (see also Section 3.6.1.5, Open or Print Documents).
- **Print Document**
  Prints the current document (see also Section 3.6.1.5, Open or Print Documents).

### 3.7.2.2 Document Information Datasheet Toolbar

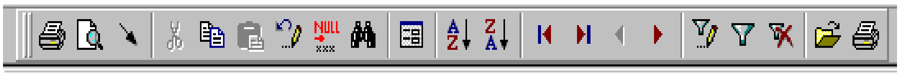


*Figure 3-74. Document Information Datasheet Toolbar*

- **Print Datasheet**
  Prints the report showing administrative data about the actual documents.
- **Preview Datasheet**
  Opens a report in the preview mode. The report displays administrative data about the actual documents.
- **Close**
  Close the form but keep the Document Builder application active (see also Section 3.6.1.8, Close the Document Information Form).
- **Cut**
  Cut a string selected with the mouse.
- **Copy**
  Copy a string selected with the mouse.
- **Paste**
  Paste a string cut or copied before.
- **Undo**
  Undo most recently changed field or undo whole record (see also related menu entries).
- **Replace NULL Value**
- **Find**
  Finds a certain string.
- **Form View**
  Switches to formsheet view.
- **Sort Ascending**
  Quick ascending sort of the data of the current attribute. The current attribute is the field the cursor is located in.
- **Sort Descending**
  Quick descending sort of the data of the current attribute. The current attribute is the field the cursor is located in.
- **Edit Filter / Sort**
  Opens the Edit Filter dialog (see Section 3.6.1.3, Search for Documents).
- **Apply Filter / Sort**
  Performs the Filter edited before (see also Section 3.6.1.3, Search for Documents).
- **Remove Filter / Sort**
  Removes existing filter, all documents are now available and can be accessed by scrolling through with the scroll buttons at the left hand bottom of the form.
- **Open Document**
  Opens the current document (see also Section 3.6.1.5, Open or Print Documents).
- **Print Document**
  Prints the current document (see also Section 3.6.1.5, Open or Print Documents).

# Chapter 4 Runtime Operation

## 4.1 Operating Overview

Not applicable.

## 4.2 Runtime Tutorial

Not applicable.

## 4.3 Operating Instructions

Not applicable.

## 4.4 Runtime Operations Menus

Not applicable.

# Chapter 5 Maintenance

## 5.1 Error Messages

If any errors occur, error messages are displayed. There are basically two kind of errors:

- Errors occurring when handling documents from the **Structure Builder**.

  These errors are displayed in the **Structure Builder**’s error window with the prefix **DOB 999**. There are no meaningful error numbers yet in this release.
- Errors occurring when working in the **Document Builder** application itself, i.e. in the **Document Information** form.

  These errors are displayed in dialog boxes.

## 5.2 Logfile

All actions performed on documents from the **Structure Builder** are logged in files **dob*.log** in the directory the environment variable TMP points to, e.g. **c:\tmp.** These logfiles are not so much meant for the user but for analysis by support specialists after errors occurred (see also next chapter). The following logfiles are written

- dobasi.log (for actions started from the Structure Builder)
- dobmda.log (for DOB functions executed by the library database)
- dobmdb.log (for DOB functions executed by the project database)
- dobupg1.log, dobupg2.log (for functions executed during project upgrade)
- dobexe.log (for functions executed on documents by an additional executable)
- dobxls.log (for functions executed in Excel documents)
- dobdoc.log (for functions executed in Word documents).

## 5.3 Reporting Problems

Please report any problem by filling in an Product Maintenance Report (PMR). For additional information please provide a copy of the respective logfile as this will greatly facilitate analysis.

## 5.4 What to Do at Program Halts

see Section 5.3, Reporting Problems.

# Appendix A Document Information

## A.1 Administrative Document Attributes

The table below lists all administrative attributes for document aspects in **Document Builder**.

Column **DocInformationPage** shows the page of the **Document Information** form where the attributes are shown. Pictures of the different pages are depicted in the next chapter.

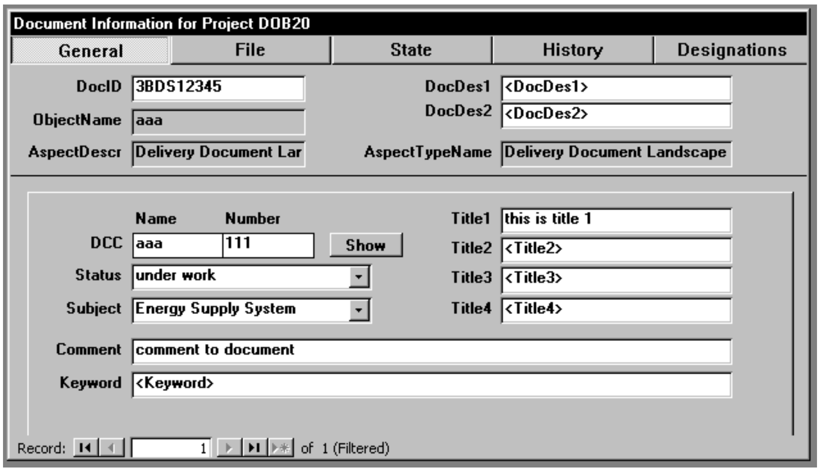
*Table A-1. Administrative Document Attributes*

| **Attribute** | **Contents** | **DocInformation Page** | **Set By DOB** | **Updateable By User** |
|---|---|---|---|---|
| DocId | document identity | All pages | no | yes |
| ObjectName | name of object the document belongs to | All pages | yes | no |
| AspectDescr | aspect description | All pages | yes | no |
| DocDes1 | document designation | All pages | no | yes |
| DocDes2 | document designation | All pages | no | yes |
| AspectTypeName | name of DOB aspect type | All pages | yes | no |
| DCC Name | name part of document kind classification code | General | no | yes |
| DCC Number | number part of document kind classification code | General | no | yes |
| Status | status of document | General | no | yes |
| Subject | subject of document | General | no | yes |
| Comment | comment to document | General | no | yes |
| Keyword | keyword to document | General | no | yes |
| Title1..Title4 | document titles | General | no | yes |
| Lang | document language | File | no | yes |
| Standard | document standard | File | no | yes |
| Template-Description | description of template | File | yes | yes |
| DocDir | directory of document file | File | yes | no |
| DocName | name of document file | File | yes | no |
| TemplateDir | directory of template file | File | yes | no |
| TemplateName | name of template file | File | yes | no |

*Table A-1. Administrative Document Attributes (Continued)*

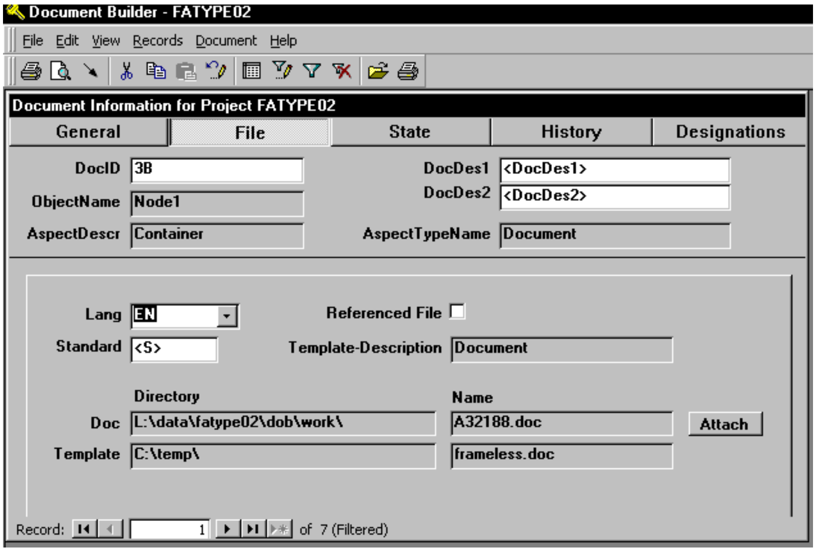
| Attribute | Contents | DocInformation Page | Set By DOB | Updateable By User |
|---|---|---|---|---|
| Status | status of document | State | no | yes |
| Company | company | State | no | yes |
| BasedOn | base on | State | no | yes |
| Replaces | replaces | State | no | yes |
| ReplBy | replaced by | State | no | yes |
| RespDept | responsible department | State | no | yes |
| PrepDate | preparation date | State | yes | yes |
| PrepDept | preparation department | State | no | yes |
| PrepName | preparation name | State | yes | yes |
| ChkDate | check date | State | no | yes |
| ChkDept | check department | State | no | yes |
| ChkName | check name | State | no | yes |
| ApprDate | approval date | State | no | yes |
| ApprDept | approval department | State | no | yes |
| ApprName | approval name | State | no | yes |
| LastEditDate | last edit date | State | yes | yes |
| LastEditName | last editor name | State | yes | yes |
| FuncDes | function reference designation | Designations | yes | no |
| LocDes | location reference designation | Designations | yes | no |
| MountDes | mounting location reference designation | Designations | yes | no |
| ControlDes | control system designation | Designations | yes | no |
| CustDisp | customer disposition | Designations | no | no |
| FreeDisp | free disposition | Designations | no | no |

# A.2  Document Information Pages



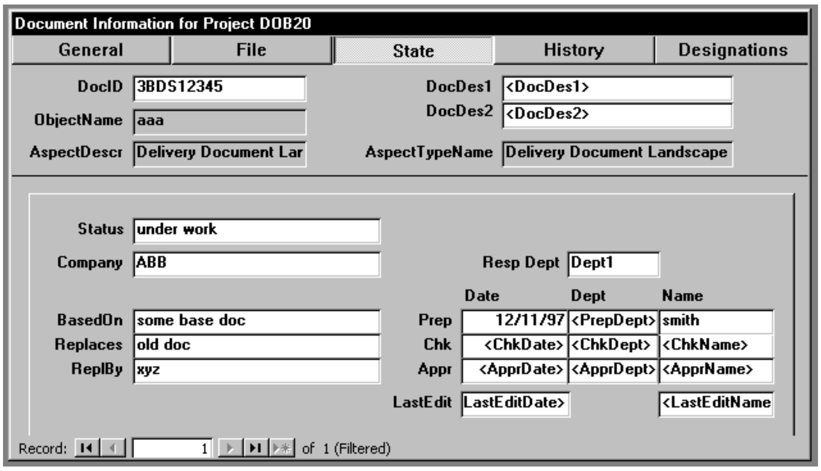
DocID: 3BDS12345
ObjectName: aaa
AspectDescr: Delivery Document Lar
DocDes1: <DocDes1>
DocDes2: <DocDes2>
AspectTypeName: Delivery Document Landscape
DCC: Name aaa, Number 111
Status: under work
Subject: Energy Supply System
Title1: this is title 1
Title2: <Title2>
Title3: <Title3>
Title4: <Title4>
Comment: comment to document
Keyword: <Keyword>
Record: 1 of 1 (Filtered)

*Figure A-1. Document Information General Page*



DocID: 3B
ObjectName: Node1
AspectDescr: Container
DocDes1: <DocDes1>
DocDes2: <DocDes2>
AspectTypeName: Document
Lang: EN
Standard: <S>
Referenced File: ☐
Template-Description: Document
Doc: Directory L:\data\fatype02\dob\work\, Name A32188.doc
Template: Directory C:\temp\, Name frameless.doc
Record: 1 of 7 (Filtered)

*Figure A-2. Document Information File Page*



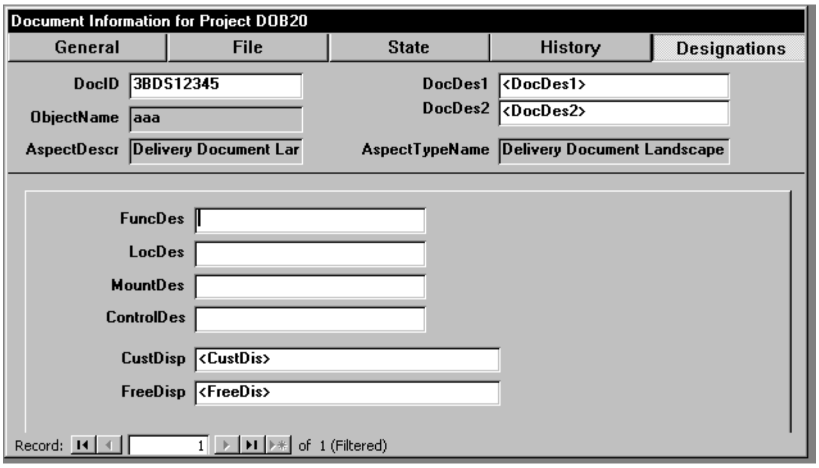
Document Information for Project DOB20

DocID: 3BDS12345
ObjectName: aaa
AspectDescr: Delivery Document Lar
DocDes1: <DocDes1>
DocDes2: <DocDes2>
AspectTypeName: Delivery Document Landscape

Status: under work
Company: ABB
Resp Dept: Dept1
BasedOn: some base doc
Replaces: old doc
ReplBy: xyz

| | Date | Dept | Name |
|---|---|---|---|
| Prep | 12/11/97 | <PrepDept> | smith |
| Chk | <ChkDate> | <ChkDept> | <ChkName> |
| Appr | <ApprDate> | <ApprDept> | <ApprName> |
| LastEdit | LastEditDate> | | <LastEditName |

Figure A-3. Document Information State Page



Document Information for Project DOB20

DocID: 3BDS12345
ObjectName: aaa
AspectDescr: Delivery Document Lar
DocDes1: <DocDes1>
DocDes2: <DocDes2>
AspectTypeName: Delivery Document Landscape

FuncDes:
LocDes:
MountDes:
ControlDes:
CustDisp: <CustDis>
FreeDisp: <FreeDis>

Figure A-4. Document Information Designations Page

# Appendix B Glossary of Terms

### Administration

All activities covering user registration and creation, renaming, backup and restore, and deletion of projects are summarized under the topic administration or project administration.

### AdvaBuild_engineers

Name of a Windows NT group created for working with **AdvaBuild Engineering Software**. Via this group the access rights of users are controlled. All members of this group can access project data. Therefore it is necessary to be assigned to this group.

Creation and deletion of projects is also controlled via the **AdvaBuild_engineers** group. But in addition you need the administrator password for the database user **EOSTB**.

### Aspect

There are often several ways to look at an Advant object, depending on how you want to handle it. When for example an Advant object is representing a valve, then you might be interested in a drawing of that valve or in its loop. Then you may create with a corresponding Builder an CAEE aspect for the drawing and a control function aspect for the loop. The aspect stores the corresponding data. An aspect is an instance of an aspect type. Normally a Builder supplies some aspect types it is able to work on. You can start a Builder on an aspect by opening one of its views.

### Aspect Attribute

An attribute holds descriptive data of an aspect, for example the attribute BUS of the Parameter Aspect Type BoardParameter.

### Aspect System

The Aspect Request Broker communicates with a Builder via a so-called Aspect System Interface. When some Builders share an aspect system interface, these Builders are referred to as an aspect system. Therefore, an aspect system may consist of one or several Builders.

### Aspect Type

Each Builder supplies several aspect types. Examples of aspect types are basic property aspect, structure aspect, or parameter aspect and its sub types or category like BoardParameter, SignalParameter, StationParameter and so an. An aspect type is designed for special tasks. These tasks will be performed by the corresponding Builders or aspect systems. An aspect type works as a template for the creation of aspects.

### Attributes

See Aspect Attributes.

### Basic Property Aspect Type

The basic property aspect type is one of the aspect types supplied by **Structure Builder**. It holds a name and the type of an Advant object. As an Advant object may have several names, it may have several basic property aspects. You can refer to a specific one with the help of its name category, for example with Customer ID.

An Advant object may have for example a customer ID "Turbine A" and a location ID "Turbine A 2nd floor".

### Builder

A Builder is an application that can perform dedicated tasks on aspects. Builders can cooperate which each other via the **Aspect Request Broker**. Examples of Builders are: Structure Builder, Function Chart Builder, Parameter Builder.

### Category

A category is a subtype of an aspect type. The name category for example is a subtype of a basic property aspect.

### Child Object

Advant objects can be visualized in a pool or in a structure window. In a structure Advant objects may have a parent-child relation. A parent object may contain several child objects. In this way you can create a hierarchy of Advant objects. Child objects can be hidden when you compress the parent object.

### Cooperating Mode

Builders can work in cooperating or independent mode. In cooperating mode Builders can communicate via the **Aspect Request Broker**. They are started by the **Structure Builder**, when you open a view of a selected aspect.

### Copy

You can copy Advant objects between projects, structures, or within structures. In each case copy creates an additional Advant object.

### Compressed Structure

For parent objects you can specify that the structure shall be displayed in compressed form. Then all successive child elements are hidden.

### Database

The data of **Parameter Builder** are stored in an **Access** database. The data are collected by a project view. Add project create the Parameter Builder database will be created; each project has it own database. The project creation can be performed with the **Project | Administration** menu command.

### Data Sheet

Besides the data stored in the aspect registry, Structure Builder stores additional data in an own format. These data can be presented in data sheets. For data sheets the same spread sheet representation as for the aspect registry is used.

### Drag and Drop

You can move, copy, or place Advant objects between or within structures by grabbing an object with the mouse and positioning it at the new location while the left mouse button is pressed. When you release the mouse button, the object will be copied, placed or moved, depending on additional keys you might have pressed during the operation: Alt: move; Ctrl: Copy; Shift: place. If no additional key is pressed, a default operation will be performed, which depends on source and destination.

### Advant object

Advant object Technology offers a methodology to model real world objects with Advant objects, aspects, and views. All entities you work with during the engineering process, like main plant equipment, components and devices, information entities like signals, or location entities like areas are referred to as Advant objects. Each Advant object may have several aspects.

### EOSTB

EOSTB is a special database user which has the access rights to create and delete projects and to change user passwords. For project administration you have to log into the system as EOSTB user.

### Expanded Structure

For parent objects you can specify that the structure shall be displayed in expanded form. Then successive child elements on the next lower level or on all levels are visible.

### Menu

Menus are part of the menu bar. When you click with the mouse on a menu bar entry, the menu will be displayed, which shows one or several menu commands or a submenu. If you click on a menu command, the command will be executed.

### Menu Bar

The menu bar is a bar below the main window's title bar. It holds the menu entries.

### Move

To change the location of an Advant object in one of your structures, you can move it to another location in the same or in another structure.

### Object

See Advant object.

### Object Name

The name of an Advant object.

### Object Type

The type of an Advant object. When you create a new Advant object, you can select among several types.

### Object Window

You will see the object window when you issue the **Object | Open** menu command or when you double-click an Advant object. In the object window you see the aspects and views of the selected Advant object.

### Parent Object

Advant objects can be visualized in a pool or in a structure window. In a structure Advant objects may have a parent-child relation. A parent object may contain several child objects. In this way you can create a hierarchy of Advant objects.

### Paste

You can insert Advant objects, that you have previously copied to the clipboard with the **Edit | Copy** menu command, at the currently selected object.

### Place

You can place an Advant object somewhere in a structure. When you place an Advant object, you do not create a new object. The object gets a new structure aspect containing the information about the new structure position.

### Pool

The pool is a list of all Advant objects. The order the elements are listed in that list is arbitrary.

### Prefix

The prefix determines the type of a reference designation. Some prefixes are standardized:

| | | |
|---|---|---|
| • | = | Function reference designation |
| • | - | Product reference designation |
| • | + | Mounting location reference designation |
| • | ++ | Topological location reference designation. |

Within AdvaBuild Engineering Software the following designation is used:

| | | |
|---|---|---|
| • | == | OCS item designation. |

Besides these predefined prefixes, you are free to use your own prefixes.

Further on, the prefix will be used to concatenate relative reference designations.

### Project Administration

Project administration covers all activities to administer projects, to assign database users, and to assign users to projects.

### Project Global Data Aspect Type

At project creation time a project global data aspect will be created as an aspect of the project object. You cannot delete this aspect nor create another one. The project global data aspect type stores general information about a project.

### Reference Designation

A reference designation designates an Advant object in a structure unambiguously (not checked by the system) with respect to its parent objects. Absolute reference designations consists of a concatenation of all relative reference designations.

### Selected Pool

A selected pool is a special pool that is the result of a filter. It is a subset of the pool.

### SQL Statement

SQL statements are used to specify filters for Advant objects. They are stored in files which you can select.

### Status Bar

The status bar is a bar at the bottom of the application’s main window. It holds some status information like keyboard settings.

### Structure

Advant objects can be related to each other hierarchically. These relations are visualized in a structure window. You can create several structures depending on your needs. Some predefined structures are available.

### Structure Aspect Type

When you locate an Advant object in a structure, it will get an corresponding structure aspect, which will hold the information about the position within the structure and the object's parent object.

### Substructure

The part of a structure that holds all child objects of a certain (parent) object. It is also referred to as subtree.

### Toolbar

The toolbar is a bar locate directly below the menu bar. It offers a quick access to some of the most commonly used menu commands.

### User

A member of a project must be known by the database as user. Members of the Windows NT group **AdvaBuild_engineers** can be assigned as database users and can be mapped to projects.

### View

An aspect may have several views. You can start a Builder on an aspect by opening one of its views. A node control software aspect as among others for example a node function chart and a node structure function chart view.

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